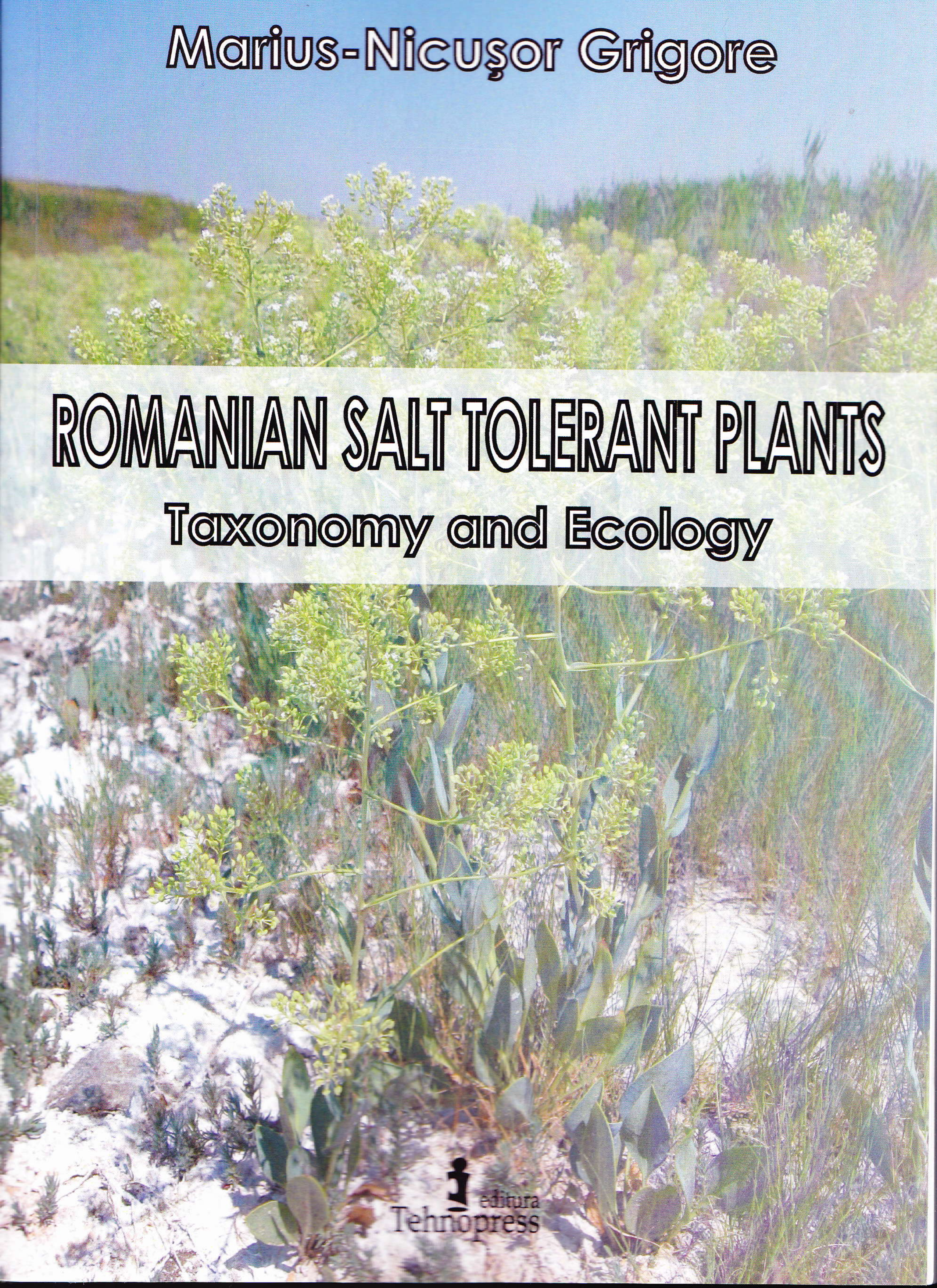
Marius-Nicuşor Grigore

ROMANIAN SALT TOLERANT PLANTS

Taxonomy and Ecology



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ROMANIAN SALT TOLERANT PLANTS

Taxonomy and Ecology

Foreword by

T. J. Flowers

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"Cultural progress and growing population require a switch of agriculture from an extensive system to an intensive one. New lands have to be introduced in order to satisfy the humanity need for progress."

(Iuliu Prodan, 1923)

Contents

FOREWORD

Halophytes are a small but fascinating group of plants that have evolved tolerance to salt. Since much of the world is covered in seawater, a salt solution dominated by sodium chloride, it is not, perhaps, surprising that there are plants that are salt tolerant. What might be surprising is that the number of halophytes is only a few thousand out of more than 250,000 species of flowering plants. Although there are many marine algae and some flowering plants that live in seawater (the seagrasses), most terrestrial plants are not salt tolerant. This poses an interesting question: why cannot most terrestrial plants tolerate salt in the soil when the world is such a salty place and marine life is abundant?

Before the evolution of terrestrial plants, all plants were aquatic and belonged to the Chlorophyta or the Streptophyta, groups that split about 1000 million years ago. Paleontological and molecular evidence suggests that the Characean algae within the Streptophyta gave rise to land plants, the embryophytes (bryophytes, pteridophytes and spermatophytes), during the Ordovician period, some 450 million years ago. Before land plants evolved, these Characean algae occupied both salt and fresh water habitats and so the question arises from which habitat terrestrial plants arose. Since any plant migrating to the land from a saline pool would have had to survive not only the very dry conditions of the atmosphere, but also the hyper-saline fringes of the pool, it can be argued that embryophytes are likely to have evolved from fresh-water algae. This being so, salt tolerance in halophytes is not an ancient trait, but must have developed during the evolutionary history of land plants, over the last 470 to 450 million years; this might explain why there are so few halophytes.

Halophytes have been recognised since the 1700s and have been the subject of study into their ecology, physiology and biochemistry as well as their distribution amongst the families of flowering plants since that time. Research has shown that flowering plants in general show a continuous range of salt tolerance, from those halophytes that can complete their life cycle with regular inundation of seawater to very sensitive species such as chickpea unable to tolerate one tenth the seawater salt concentration. Drawing a dividing line in this continuum, to separate halophytes from other species (glycophytes), is somewhat arbitrary and different authors have placed that division at different salt concentrations - between about a third and a half the salt concentration in seawater. As a consequence, the number

of species that are classified as halophytes varies - but does still not exceed about 1-2% of the total number of flowering plants. So, halophytes are not particularly common, taking the whole range of plants into consideration.

Halophytes have a number of adaptations that enable them to tolerate salt, from succulence to salt glands: salt tolerance is a complex trait physiologically and genetically. The complexity of salt tolerance in plants takes us back to asking if it evolved just once. The answer appears to be no. Recent studies suggest that halophytes have evolved on many occasions, but have rarely given rise to large lineages, suggesting that halophytism is a trait that bears a cost and so is often lost. One consequence of the complexity of salt tolerance is that is proving difficult to change the tolerance of the plants on which we depend for food.

The world population has grown rapidly since the seventeenth century and now reached about seven billion people, all of whom have to be fed. The amount of food produced in the world, as estimated by the production of cereals, increased dramatically in the twentieth century as a consequence of the so-called ‘green revolution’. Since the 1980s, when the population was about 4.4 billion, the amount of food produced (cereals) has roughly kept pace with population growth. However, if the population is to increase from the current 7 billion to 10 billion by the end of this century, what was achieved in the green revolution will have to be repeated – and in a world with diminishing resources and increased climatic variability with increased salinisation of land. Consequently, we are going to need crops with greater salt tolerance than those we have at the present. It is here that knowledge of halophytes is vital.

Marius Grigore has collected important information on halophytes growing in Romania. However, this book is much more than just a species list, it include a history of definitions of halophytes as well as a commentary on the history of halophytes in Romania. It is an important contribution to the literature on halophytes.

T. J. Flowers April 2012
University of Sussex

INTRODUCTION

Dealing with any aspect of a certain ecological group of plants could be a challenging business, due to the complexity of definitions, adaptive features and subtle ecological interrelations between plants and their environments. Halophytes represent no doubt a very heterogeneous group of plants; they are widely distributed in many families, as well occurring in various saline habitats (Grigore, 2011).

The interest in the study of halophytes is still argued by theoretical reasons, and especially by the current context of human condition, regarded as a well-defined part of surrounding environment. Salinity has affected agriculture from millennia, having a deeply negative impact in agriculture and most likely, being involved in the fall of some ancient flourishing civilizations (Grigore and Toma, 2010a).

A short description of the current scenario we are facing can help to get a large picture of the past, present and future in the agricultural history.

The Earth's total surface area covers about 13.2 billion ha, but no more than 7 billion ha are arable and 1.5 billion are cultivated (Massoud, 1981). Of the cultivated lands, about 340 million ha (23%) are saline (salt-affected) and another 560 million ha (37%) are sodic (sodium-affected) (Tanji, 2002). Here are many different projections, suggesting that human population will increase over 8 billion by the year 2020 that will worsen the current scenario about food insecurity (Athar and Ashraf, 2009). There are often not sufficient reservoirs of freshwater available and most of the agronomical used irrigation systems are leading to a permanent increase in soil-salinity and slowly to growth conditions unacceptable for most of the common crops (Koyro et al., 2009). A global study of land use over 45 years found that 6 % had become saline (Ghassemi et al., 1995). Soil salinity expands, and some studies suggest that this process is almost irreversible and difficult to control. In Australia alone, 2 million ha have become saline since clearing began a century ago, and another 15 million ha are at risk of becoming saline in the next 50 years. Irrigation systems are especially prone to salinization; about half the existing irrigation systems of the world are under the influence of salinization, alkalization or waterlogging (Szabolcs, 1994). Irrigation schemes cover only 15 % of the world's agricultural land (227 million ha in 1987), but as irrigated land has at least twice the productivity of rain-fed land. On the other hand, it is well known that the actual population of the world has about 6.7 billion people,

but according to some calculations, in 2050 this could reach 9.5 billion value. According to a FAO Repport (2007), despite unprecedented global economic growth, 1.1. bilion people continue to live in extreme poverty and more than 850 milion people suffer from chronic hunger while ecosystems are being threatened as never before. Not accidentally the first goal of *The Millennium Development Goals Report* (ONU Published, 2008) is to eradicate extreme poverty and hunger.

So, salinity is one of the most severe environmental factors limiting the productivity of agricultural crops, because most crops are sensitive to salinity induced by high concentrations of salts in the soil (Pitman and Lauchli, 2002). The cost of salinity to agriculture was estimated to be about 12 billion USD per year (Ghassemi et al., 1995), but perhaps this value will be greater, since it is expected that soil salinity shall increase continuously.

This brief presentation of data suggests that salt tolerant plants should be taken into consideration, since they could play an important role in biosaline agriculture (Grigore and Toma, 2010a).

The potential use of salt tolerant plants in the context of future agriculture strictly requires a good knowledge of species that might be used as crops or other resources; understanding their salt tolerance mechanisms and ecology also would be a *sine qua non* condition for introducing these taxa in agricultural practices.

The main objective of this book is to collate data referring on Romanian *salt tolerant plants* and to review the literature which has been published over more than last century in botanical field. The writing of this book has taken much longer than I intended and many of my ideas have evolved in keeping with the format and progress of the book. The history of this work dates back to 4 years ago when I started to publish and promote books in a series that I wanted to be included in a new botanical discipline, called *Halophytology.* The topics covered in this book range from discussions about halophytes definitions and classifications to a large list with salt tolerant plants growing in Romania.

However, since the terms “halophytes” and “salt tolerant plants” are often interchangeable, I would invite readers of this book to also have in their mind the term “plants susceptible of being salt tolerant.” This is because everything dealing with salinity is, in some extent, problematic; perhaps avoiding general and radical statements about halophytes would be the most acceptable strategy.

I would like to acknowledge the generosity of Tim Flowers, University of Sussex, for writing a Foreword for this book. His advices and ideas about halophytes were very invaluable for me.

I am also sincerely indebted to Professor Monica Tereza Boşcaiu Neagu, Universidad Politecnica de Valencia, Spain, and to Professor Suzana Kratovalieva, Institute of Agriculture Skopje, Republic of Macedonia for their consistent suggestions and indications in reviewing the manuscript. My special thanks also go to lecturer Ciprian Mânzu, Alexandru Ion Cuza University, Faculty of Biology Iasi, Romania, for reviewing the book and providing comments in such a positive light. I am also appreciative of the support he has given me during field trips looking for halophytes.

GENERAL SCIENTIFIC BACKGROUND

1. Learning from the previous attempt to create a Romanian salt tolerant plants database

In 2008, we published a list with Romanian salt tolerant plants (Grigore, 2008a), or plants *susceptible* to be salt tolerant. This compilation, derived mainly from data extracted from Romanian literature, has revealed that the number of salt tolerant plants depends, inevitably, on definitions and characterizations attributed to halophytes by various authors. In Romania, the experience and background in working with halophytes are quite limited, at least in terms of physiological and experimental approach. In time, this tendency was accompanied by quite abundant floristic and basic ecological work. This trend was supported by an intuitive and ecological definition of halophytes, strictly related to saline environments. Anyway, the botanical works focused only on halophytes are limited. There are two difficulties when choosing the criteria used for including species in this database. First, ecological definitions are versatile and to some extent arbitrary. Second, this type of definitions had to be correlated with the habitats where these species vegetate and where they have been observed and collected by botanists. Here again occurs a problem. Although the Romanian language associated with hipersaline environments is scarce compared to others, botanists used a non-technical term (Grigore, 2008b) when referring to this general type of ecosystem (*sărătură*). In addition, even when terms that are more precise were adopted from soil science (i.e., saline and alkali soils) to be used by botanists, they actually mistook them for the older, non-technical term. In this way, a restricted and strong "tradition" in relation with definitions of halophytes and saline environments was created and preserved over time.

At that time, we selected from Romanian literature those species designated by different authors as halophytes *lato sensu* (see also Table 1) and/or those species found in saline environments. When a botanist said that a certain species vegetates in a saline habitat, we had to rely, *a priori*, on this assertation.

Summarizing, the faced difficulties were the following:

A. the lack of a precise (and idealistically a single) definition of halophytes;
B. problems with the definition and features of saline environments;

C. possible misidentifications of several species growing in a certain habitat;
D. special nomenclatural situations due to some periods in Romanian history;
E. subjectivity of some Romanian botanists when offering some ecological notes;
F. gathering data;

Nevertheless, these inherent difficulties are still persistent and they always would lead to imperfections in collate data regarding salt tolerant plants.

A. The lack of a precise (and idealistically a single) definition of halophytes

There are many definitions of halophytes[1]; some of these were recently summarized and discussed by us (Grigore et al., 2010), when we tried to pay attention to the huge diversity of the origin and nature of halophyte definitions. We were able to conclude that existing definitions are based on ecological, physiological and biochemical criteria and sometimes there are consistent variations or combinations of these criteria.

Although they have certainly been recognized since the time of Goethe (ca. 1790, cf. Flowers et al, 1986), halophytes were taken into scientific attention through the papers of Schimper (1891; 1898) and especially Warming (1895; 1897; 1906; 1909). Although halophytes have been recognized for hundreds of years, their definition remains equivocal (Flowers and Colmer, 2008). There were many of halophytes' definitions; some of them reflect the scientific background of the researchers who define these plants. In the same time, we can notice a "historical" evolution regarding the halophytes, taking into account the accumulated data in their biology.

But why is it so difficult to define such a "simple" term?

The definition of halophytes is manifold. This fact is explained by the following considerations (Grigore *et al*., 2010):

[1] At this time, we are still using the term "halophyte" to facilitate the reading of the text. Actually, according to our opinion, *halophytes* are not perfect synonyms with *salt tolerant plants*. See further paragraphs.

1. Halophytes are in fact a heterogeneous ecological group of plants; high salinity was not the one factor “building” the history of these plants, several additional ecological factors contributed to their evolution. So, describing halophytes only in relation to salinity could be reductionist. Researchers working on various aspects of halophytes adopted them unilaterally. This is, of course, natural if we think about their "professional" expertise in halophytes. It seems logical that an approach following one single criterion often leads to acceptance and internalization of a single standard-definition, which scientists take into account in their research. This is one of the reasons explaining why each author has given a specific definition of halophytes, a definition with a personal “signature” in a certain context that preserved after for several decades;

2. The concept of salinity itself and hence the concept of saline habitats are relative and ambiguous. The term *salinity* it is not, *per se*, a biological one; thus, the scenario could become complicate, when adopted by other natural science. Ecologically speaking, we think that halophytes must be considered all species that vegetate in saline habitats (Grigore, 2008a; 2008b; Grigore and Toma, 2010a). This definition seems simple and accessible but only at first, because saline habitats are again imprecisely defined;

3. As knowledge about halophytes has been progressively accumulated, the directions of research have expanded and deepened accordingly. At the beginnings, attention was focused on their ecology and distribution. This quite simple interest was based mainly on intuition, allowing some correlations with morpho-anatomical adaptations to be done. But gradually, many aspects focused on physiology, salt tolerance, cellular and molecular biology or genetics were revealed. This new context has not provided the “ideal” premises, which would have lead to a convergence in unifying the halophytes definition. Moreover, it amplified the number of definitions. Sometimes, in sciences, new discoveries deepen the old findings, a “good” opportunity to open new challenges;

4. Another problem arises from the fact that there is a semantic field related to halophytes (especially regarding their classification). This filed is made up of different terms, formulated by different authors; but sometimes these terms are synonymous with each other. Some previous terms were adopted by further researchers and in a way the “new” terminology does mean the halophyte semantics clarifies.

Halophyte literature often show that the tendency to get synonyms or translating when translating various terms main meaning of such terms get diluted.

Conceivably, in several situations, the impossibility of translating a specialized term from a source language by a single term in a target language, "forced" the researcher to translate it by an expression of more than one term. It shows the "historical" evolution of a language related to halophytes terminology.

In the Table 1, we can notice some examples of semantic fields occurring in English and Romanian languages.

Table 1. Semantic field with different words related to halophytes (after Grigore, 2010)

Romanian	English
Halofite; plante de sărătură; plante halofile; plante iubitoare de săruri; plante de locuri sărate.	Halophytes; salt tolerant plants; salt plants; high salinity tolerant plants; salt loving plants; halophylous plants; halophytic plants; maritime plants

For instance, some authors tried to translate the term *halophytes* (the simplest and following the old Greek etymology) by *salt tolerant plants*. It is obvious that according to most definitions, all halophytes are salt tolerant plants, but perhaps many *glycophytes* have some mechanisms assuring them a certain degree of tolerance (or resistance) to salinity. In addition, using a term such as *high salinity tolerant plants* conducts inevitably, to the context in which the reader must to guess what "high salinity tolerance" could mean. Ecological groups of plants designed by names formed with – *phyte* (*phyton* = *plant*, in old Greek) preceded by prefixes such as *hydro-, xero-, meso-, halo-, psychro-*, and so forth were used as a simple but precise way in order to delineate different plants, according to their affinity for a main ecological factor. Things became a little bit complicated when this standard way of designating ecological classes has been modified and replaced by words such as: *hydrophilous, xerophilous, halophilous plant*, which literally means "water/drought/salt loving plant". This would imply a close interrelations between plants and the corresponding ecological factor, despite several variations that may occur within. Therefore, a discrete semantic alteration from the basic meaning occured, and ever since a sort of ambivalence dominated these new given names.

For instance, *halophylous plant* means *salt loving plants*, but sometimes I found sentences with halophytes and salt stress in the same context. This would appear as a paradox, since a plant *loving* (*preferring*) salinity (understood of course as high salinity) could not be *stressed* by the same factor it loves.

Table 1 shows that the diversity of associated language is greater and even ambiguous. Few botanists have drawn into discussion these semantic problems and their collateral implications. The terms included in Table 1 are not synonyms, at least not perfect synonyms.

5. Not in the least, we must say that there are some difficulties working in experimental conditions, when efforts for establishing salt tolerance thresholds are carried out. The experimental scheme never reproduces completely the natural conditions, where the environmental factors are always variable. The intensity and variability of these factors are less predictable; in the lab, we can choose the intensity of salinity we want to test, but in the natural ecosystem, the salinity and hydric status of the soil are not constant.

One of the most important attribute of halophytes is their salinity tolerance. This property of halophytes seems to provide to euhalophytes real advantages for the competition with sensitive plants (glycophytes) (Koyro et al., 2006). Unfortunately, the many available definitions especially for *salinity tolerance* (threshold of salinity tolerance) make a uniform description and the comparisons between species complicated (Koyro et al., 2006). This is because:

a. Phytosociologists are using this term only for plant growing naturally in saline habitats. In the field, phytosociologists need to get quick information on salinity tolerance; the vegetation analysis is very useful and salinity tolerance numbers are widely applied for qualitative approximations (Ellenberg, 1974);

b. Other scientists describe salinity tolerance by polygonal diagrams of the mineral composition in plants;

c. The salinity tolerance threshold is described in some definitions as the point (salt concentration) when the ability of plants to survive and to reproduce is no longer assured (Pasternak, 1990). Anyway, attention should be paid to the fact that survival and reproduction of a plant are not always impeded at the same level of salinity (Tazuke, 1997);

d. However, the definition of Pasternak (1990) is fairly important for the interpretation of ecological dissemination and can be used as a reliable basis for physiological studies on the survival strategies of plants;

e. Generally, classification of the salinity tolerance of crop species (glycophytes) is based on the threshold of electrical conductivity and the percentage of yield decrease beyond the threshold (Greenway and Munns, 1980). Often, salinity tolerance is assessed as the percentage of biomass production in saline versus control conditions over a prolonged period of time (Munns, 2002). The substrate-concentration leading to a growth decrease of 50 % (in terms of fresh weight, in comparison to plants without salinity) is largely used by ecophysiologists as a definition for salinity tolerance threshold. This approach is also arbitrary, to some extent, but it leads to a precise specification of a comparative value for halophytic species and is especially relevant in applications, such as economic potentials of suitable halophytes;
f. One definition can be also given referring on glycophytes; especially in agriculture, it is very common to speak of salinity tolerance if a variety of a glycophytes, such as *Hordeum vulgare* survives at a higher salinity level than another variety of the same species. However, the tolerated NaCl-substrate concentrations are in both varieties far beyond seawater salinity (Amzallag, 1994; Jeschke *et al*., 1995).

A short historical evolution of Halophytes definition

Recently, several definitions of halophytes have been summarized and discussed in a historical context (Grigore *et al*., 2010), which draws a good picture of the evolution of some concepts according to various stages and visions of authors defining halophytes (Table 2).

Table 2: A chronological list of halophytes definitions

Definition or descriptions related to halophytes	References	Comments
A plant containing a large quantity of common salt in its composition, and which thrives best in salty places	Crozier (1892)	Despite its earlier character, this definition is interesting because it suggests the capacity of halophytes to accumulate salt in big amounts. Nowadays, we know that this is a group of halophytes accumulating salts, in contrast with those secreting it.
Salt – loving plants (are in the most of their characters, strikingly	Barnes (1898)	Many plant ecologists consider halophytes a

similar to the xerophytes)		particular case of xerophytes (see further comments in this table).
Species of saline and alkaline soils (salt plants)	Clements (1907)	Saline and/or alkaline soils are terms more precise than other words designating saline environments.
A certain amount of soluble salts must be present before halophytic vegetation is called into existence	Warming (1909)	How precise the term "certain" could be?
Plants which grow where the water contains salt; the effect upon them is seen in their fleshy habit	Bower (1911)	In fact, always the soil solution contains "salt"; the issue is concentration. Not all halophytes display a fleshy tissue.
Strand plants, or Halophytes, living along the margin of salt water, and therefore condensed and otherwise adapted to the difficult absorption thereof	Ganong (1913)	We must discriminate that not all halophytes are strand plants; they could appear also in the inland salt marshes/areas.
Halo-philous/phytes, plants of sea-coasts and salt-steppes, where the presence of salt, by checking absorption, compels a reduction of transpiration	Willis (1919)	Here we can notice the introduction of "physiological drought" hypothesis characterizing saline soils. This is "famous" for a certain period of plant ecology (see Grigore and Toma, 2010b).
Plants which at any stage of their life are subjected to a concentration of salt, which is more than "normal" glycophytic plants can bear without dying	Stocker (1928)	The salt concept is ambiguous one (see the discussions above). It is difficult to establish if the plants are exposed all the time to salt, at any stage of their life-cycle.
Salt plants; Typical halophytes; true halophytes; *absolute halophytes*∗; the obligate halophytes are plants which for their normal development need certain ions of the alkali metals and halogens, and which, therefore, can exist and bear seed only in soils containing salt	Braun-Blanquet (1932)	A good definition of obligate halophytes; ∗ this is the single place when this term was found (!).
Plants that grow in saline soil or in salty water are called	McDougall (1941)	An interesting definition stated that halophytes are a

halophytes and they are strikingly xeric		peculiar case of xerophytes (for extensive comments, see Grigore and Toma, 2010b).
All plants that are capable of growing in an environment where there is more than 0.5 per cent sodium chloride	Chapman (1942)	Chapman's comments: "its (definition, n.n.) use will not imply that the species is either common or rare in such habitats nor will the term involve the assumption that a plant cannot grow under any other conditions". Salinity is a very changeable ecological factor: choosing a number for drawing a line between two different plant groups could be hazardous.
Plants that can tolerate the concentrations of salts found in saline soils are termed halophytes	Oosting (1948)	
Plants tolerant of various mineral salt in the soil solution, usually sodium chloride.	Lawrence (1951)	
Plants growing on salinized media	Bucur et al. (1957a)	
Plant that grow exclusively on salt soil	Dansereau (1957)	"Exclusively" could also suggest that the author actually thinks only to eu-halophytes.
Plants growing in saline soils	Fernald (1957)	
Salt-tolerant plants	Chapman (1960)	Neither salt nor tolerant are well defined.
[..] the extremely saline soils which are inhabited only by specially adapted plants (halophytes); plants which habitually grow in very salty soils - halophytes, or at least *can* grow in such soils (facultative halophytes); Halophytes are plants which can tolerate a considerable degree of salinity	Polunin (1960)	A good definition of eu-halophytes; growing does not necessarily means reproducing?...
Plants of salty or alkaline soils	Correl and Johnston (1970)	
1.Plants which grow and complete their life cycle in habitats with a high salt content. 2. Usually, the term is reserved only for plants	Waisel (1972)	1. It's very difficult to precisely say what high salt content represents.

which appear in salty habitats constantly and specifically.		2. This remark of Waisel suggest that the term to be applied only to eu-halophytes ("true halophytes").
Plants that can tolerate sea water, pure or diluted.	Duncan (1974)	The sea water concentration it is not a universal standard, so pure or diluted could be regarded as quite relatively adjectives.
Plants of salty environments; plants adapted to live in a saline environment, be it seawater, a salt-water marsh, or a salt-desert. Plants found growing under naturally saline conditions; for terrestrial plants, this means a minimum salt concentration of about 100 mM in the soil solution. Plants adapted to complete their life cycles in salinities about that of seawater.	Flowers et al. (1986)	This is perhaps among the first physiological definition of halophytes.
The term halophyte literally means salt plants, but is used specifically for plants that can grow in the presence of high concentrations of Na salts	Sharma and Gupta (1986)	Perhaps referring also to the character of eu-halophytes.
Those species for which saltmarsh is a major and, in any cases, only habitat.	Adam (1990)	A good ecological definition.
Plants that grow in saline conditions	Ingrouille (1992)	
Plant species with a set of ecological and physiological characteristics allowing growth and reproduction in a saline environments. *Arbitrarily* a salinity of 0.5 % NaCl in soil water should be tolerated by halophytic plants	Gorham (1995) [cited by Rozema, 1996]	Some authors are aware of this arbitrariness.
Halophytes are defined as those plants which grow and complete their entire life-cycle in saline habitats. Coping with salinity needs adaptations on all levels	Breckle (1995)	"Entire" means inclusively producing seeds for assuring plant survival, colonization, and stabilization in any habitat.

from the autecological, the tissue and cellular level to subcellular and biochemical adaptations		A holistic definition.
Plants that occur naturally on soils or in water too salty for the average plants are usually designated as halophytes	Dagar (1995)	
[The growth] of halophytes is optimal at relatively high levels of NaCl, a response which can be explained only in part by the role of sodium as a mineral nutrient in these species	Marschner (1995)	This is an example of an indirect definition of eu halophytes.
Halophytes are adapted to survive in a range of saline environments	Weber (1995)	
Halophyte species are those occurring in naturally saline conditions *only*	Aronson and Le Floc'h (1996)	Also suggesting the "obligate" character of (some) halophytes.
The vegetation of saline habitats is designated "halophytic"	Poljakkoff-Mayber and Lerner (1999)	Saline habitats are defined by these authors as those whose soils contain a high percentage of soluble salts, and one or more of these salt components is usually in excess.
Salt tolerant plants (halophytes, including salt marsh and mangrove plants) are highly evolved and specialized organisms with well-adapted morphological and physiological characteristics allowing them to proliferate in the soils possessing high salt concentrations.	Khan and Duke (2001)	A good holistic definition.
Plants that can grow on soils with a high salt content are termed halophytes	Fitter and Hay (2002)	
Plants that can survive in or benefit from an environment with a high level of salt (i.e., sodium chloride), as in saline soils and seawater	Mooney and Canadell (2002)	
A plant or microorganism that grows well in soils having a high salt content	Mc Graw-Hill Dictionary of Science (2003)	
Halophytes are salt-resistant or	Ness (2003)	

salt-tolerant plants that thrive and complete their life cycles in soils or waters containing high salt concentration		
Halophytes are able to adapt faster and to tolerate extreme salinity	Schulze et al.(2005)	A deeper physiological definition.
Plants that are able to grow on mildly to strongly saline soils (halobiomes). Halophytes which tolerate or endure high levels of salt are known as euhalophytes.	Ingrouille and Eddie (2006)	Mildly, strongly, high levels ..are not so well defined terms. However, these authors are among the only ones distinguishing between "halophytes and salt-tolerant plants", a very subtle but pertinent remark in the context of our previous discussions on the semantic field.
Plants that survive to reproduce in environments where the salt concentration is around 200 mM NaCl or more	Flowers and Colmer (2008)	
Halophytes grow naturally in very salty soils; they still have not lost their resistance mechanisms to salt-stress conditions	Koyro et al (2008)	
Plants of saline habitats	Holzapfel (2009)	
Plants able to complete their life cycle on saline substrates	Koyro et al (2009)	
Plants that are tolerant of excess salt	Quinn (2009)	

A glance cast to definitions in the Table 2 reveals that there is only a vague uniformity in defining halophytes. Often, a new definition is in fact an older definition with amendments and additions, so the "paternity" of a definition could be obscure. Despite the large number of definitions attributed to halophytes (and this table is not, of course, exhaustive) some general conclusons could be drawn:

1. Many definitions are in fact only terms composed by an adjective and a noun (see Table I). There is nothing to be detailed, about the "salt" concept we extended in the above paragraphs. These definitions are very simple, if we ponder in-depth about salt and salinity;
2. Some definitions could be considered as "ecological," every time the plants are correlated with saline habitats. It seems very logical when taking into consideration that we deal with an ecological group of plants. Sometimes, the authors talk about the condition of "completing life cycle" characterizing halophytes. Here, some additional comments are required. Complete life cycle means, of course, that the plant needs to flowering, in order to produce fruits with seeds. These will germinate and thus will ensure the plant survival and its stability in a given habitats. Germination in a saline environment is a very delicate and sensitive issue regarding halophytes biology (see Ungar, 1991 and references therein). We think that the halophytes definitions including the absolute necessity to completing the entire life cycle must be discussed with caution. It is well known that the success of halophyte populations, especially for *annuals* that have only one opportunity in their life history to reproduce is greatly dependent on seed germination responses (Ungar, 1991). Seed germination for most halophytes occurs during periods of the year when soil salinity levels are reduced (Ungar, 1978). In addition, laboratory investigations with halophytes suggest that optimal germination percentages are usually found in nonsaline conditions. Anyway, it must be emphasized that generally, the seeds of halophytes can tolerate higher salinity concentrations than those of glycophytes. In a salt marsh the halophytes must adopt therefore different survival strategies. It was shown that the majority of salt marsh species are *perennial* and in fact, relatively few species of annuals have become adapted to the true salt marsh habitat (Ranwell, 1972). This would imply that perennial halophytes, having rhizomes, for instance, would be able to assure the persistence at a location on the salt marsh for several decades. So, they would be able to survive in a saline habitat, without "completing the entire life cycle" (hypothetically, without flowering, producing seeds which will germinate generating seedlings);

3. Some of the above definitions induce a subtle nuance: halophytes are those species growing in saline habitats *only* (or in conditions of an excess of salts, high levels of salt or plants that need a high concentration of salts in their media for an optimal growth). This is, more likely, a definition of euhalohytes (obligatory halophytes). However, we think that this could be also a hazardous or even reductionist definition. There are still many discussions regarding the "absolute" requirement of these species for a high salt content and the remaining types of halophytes would be eliminated. We have to think in terms of arbitrary and relativity when making such assertations. In fact, there is a continuous flow of adaptations to salinity in a saline environment and it would be better to leave behind certain limits when including halophytes in one or another category;
4. Some definitions could be regarded as "physiological" ones. Establishing a numerical boundary between halophytes and glycophytes could be useful for a standardization, but perhaps many of these definitions are the result of experimental approaches, when the natural situation is completely different. Nevertheless, the value of these definitions should not be denied, especially when we need to compare different species in terms of their salinity tolerance.

B. Problems with the definition and features of saline environments

The diversity of Romanian saline environments, although lower than those of other countries (i.e., from tropics), is not related to a precise word/term, describing this type of habitat. For many decades, working with halophytes was exclusively a botanist's work, so they simply correlated the salt tolerant plants with corresponding ecosystems. As they were not soil scientists, the "interest" in giving an accurate definition of salinized ecosystems was irrelevant. The earliest and most common term to be used by all plant scientists will be "***sărătură***," a quite vague term not strictly belonging to soil science. It has been used since the 19[thy] century. This term is almost impossible to be translated in English; perhaps the expression "salt(y) area" would be most appropriate, since the Romanian word is used both for maritime salty areas, as well for inland salinized surfaces. It is tricky to translate it by "salt marsh", which is a common term used in Anglo-Saxon languages.

This is because from ecological point of view, the term “marsh” suggests a habitat closely related to water and/or soil humidity. The Romanian term was and is still used also for a dry salinized habitat, so, to some extent, there will be a minor ecological error to translate by “salt marsh.” The etymology of this term seems to be quite old, literally meaning something somehow “salty.” The Latin word “*sal, salis*” seems to be appropriate, but further documentation will provide data that are more accurate. Besides, the Romanian term is not a scientific one, *per se.* It does not belong either to Plant Sciences, or to Soil Sciences. For instance, even when mentioned in monographs dealing with saline and alkali soils from Romania, the word is written between inverted commas, and defined as: “*a soil whose fertility is strongly affected by the high content of soluble salt from its profile, by the presence of changeable sodium and by the presence of mineralized water located in the shallow depth of the soil”* (Sandu, 1984).

Environmental conditions in Romania provide a scarcer vocabulary to be used when describing the salinized ecosystems. The naturally salinized areas from Romania can be classified as fallow: inland and littoral salinized areas. Those from inland could be dry (with steppic conditions) and wet (salt marshes, *stricto sensu*), sometimes located near to salty lakes. Those from littoral are confined to seashore and in the proximity of salty lakes and regularly display a specific halophytic flora, slightly different from that of inland saline areas.

Usually, botanists were evaluating the salinized ecosystems following some “macroscopic” features of soil and vegetation and sometimes they were evidencing the apparent character of indicators species, thus suggesting a hypersaline environment. Nevertheless, in fact, when a botanist (often a taxonomist) cited a certain species as occurring on a salinized area (*sărătură*), no implicitly precise data about this ecosystem was given.

C. Possible misidentifications of several species growing in a certain habitat

Some salt-related species included in tis database run the risk of possible misidentifications made by several authors in time. Several genera are challenging in terms of taxonomy (*Puccinellia, Artemisia,* several chenopods species, especially those succulent and articulated).

Sometimes literature on some genera was scarce and even confusing and botanists might have been disoriented trying to identify them. The status of several species has also changed; often a species is given as a genus species of a in some works (identification key manuals), and as subspecies, in others.

In other situations, it is possible that botanists might have been using some foreign identification keys manuals where species were described and classified. Some of them had certainly various synonyms, but the nomenclature of a given species from there was different from that of other manuals. In this ways, it is possible that the same species to be identified as different taxa by various botanists.

A typical example is that of *Artemisia maritima* L., that actually does not grows in Romania (Oprea, 2005; Ciocârlan, 2009), but for many years it has been mentioned in numerous papers; sometimes, following a tendency to find a synonym, this species has been included in or assimilated by *Artemisia santonica* L. (a different species). In other situations, several nomenclatural mixtures became possible: subspecies of *A. santonica* are included among subspecies of *A. maritima* and so forth.

Other intriguing species are those included in *Chenopodiaceae*[2], especially those articulated ("leafless") which impose some problems because a lot of work is required to find them in flower or after producing fruits and seeds (an important character of diagnosis). Perhaps some botanists identified them by vegetative features only, rather than by reproductive ones, and in this way, some misidentifications occurred. My personal experience, carried out with *Sarcocornia* and *Arthrocnemum* species from Spain revealed the importance of identify some important and relevant morphological characters visible only after producing seeds, which would strength the real diagnosis of these genera.

Sometimes, few botanists, working at the beginning of 20[thy] century, referred to "forms" and described them as ecotypes – in relation to some variations of ecological factors. But at the end of their descriptions, they added an author' name to the "forms," thus suggesting that they were talking about a species, *stricto sensu*. In this way, confusion might have been occurred, since the limit between species and ecotype is not clearly marked.

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[2] In this work, we maintain the *Chenopodiaceae* apart from *Amaranthaceae*, according to Romanian nomenclature, despite the fact that some nomenclature systems included *Chenopodiaceae* in *Amaranthaceae.*

D. Special nomenclatural situations due to some periods in Romanian history

The geopolitical surface of Romania underwent changes in the last century. After the Second World War (1939-1945), Romania lost important surfaces, its total area decreasing. In this way, several works in halophytes carried out before the War had to be regarded in that historical context.

It is expected that some species mentioned only in those lost areas to be seriously reconsidered in the present. This situation is available for those important botanical works conducted before the War. Actually, not accidentally, several species have not been mentioned anymore after that.

For the purposes of this paper, this consideration is extremely relevant, since a part of great masterpieces in halophytes have been written before 1939.

E. Subjectivity of some Romanian botanists when providing ecological notes

This is perhaps the most important problem we were facing trying to collate the existing data on halophytes. Logically, botanists correlated salt tolerant plants by their natural environments. From here, many hazardous issues arose, because various authors differently evaluated the ecological traits of salinized ecosystems.

For instance, we found that many species are cited in a habitat that was described as *more or less, moderately, intensely, sometimes – salinized*, and so forth. Such expressions are exposed to a certain degree of subjectivity. There is no way to “convert” these assertions into numerical data, which would contribute to a more appropriate picture of saline environments.

The approximations regarding some ecological factors in the field are more or less arbitrary.

Another situation we found is the following: a plant association is related to salty areas and is described accordingly. However, in its detailed description, not all the given species are explicitly correlated with salinity; no doubt, many of them are facultative or accidentally halophytes, but this is a deduction made by us. These species were anyway included in this list.

A survey of referred literature leads us to the conclusion that this situation is quite common. Based mainly on intuition and naturalistic background, many botanists were used with this kind of approximation.

F. Gathering data

Comparatively to other countries, we cannot say precisely that Romanian data regarding halophytes and saline habitats are relatively scarcer than those of other countries. Anyway, in Romania the "Halophyte problem", *stricto sensu* (see Chapman's expression, 1936) does not pay so much attention as elsewhere. Apart from several important authors who focused mainly on the halophytes taxonomy and ecology (Prodan, 1922; 1939; Țopa, 1939; Bucur, 1957; 1960; 1961; Şerbănescu, 1965; Pătruț, Pop, Ioan, 2005), there were few concerns in studying other aspects of halophytes biology. Generally, the large majority of plant scientists referring on halophytes were taxonomists who mention halophytes species only as a part of their general work. The number of those works is even impressive and Romania has a deep botanical tradition in floristic approaches.

Masterpieces in Romanian halophytes

In fact, these monographs are the main sources of information for this compilation, mainly for ecological considerations. They are either chapters in some books, either separate works focused only on halophytes and especially on their ecology.

Iuliu Prodan, the earliest halophytes' ecologist

Prodan, in an extensive study (1922) and further in one chapter (1939) gave some consistent ecological information about Romanian halophytes. These are of a great value and the ecological notes related to a huge number of halophytes are provided in a deep, holistic manner. He described approximately 184 species (1922), and in the other work (1939) mentioned about 281 salt tolerant plant species. But here is no attempt to classify the halophytes and neither in 1939, when a "rudimentary" classification is included, he did not use a nominal, "standardized" classification of halophytes. Prodan included halophytes in: "first, second and third" category of halophytes.

Therefore in the "first category" are included species that "grow **exclusively** in salt areas and only exceptionally in other places". Plants added in "the second category" represent "the species which besides salty areas can also vegetate in certain habitats (waters, marshes, sands)". The "third category" comprises species that "grow in other environments and can pass only rarely or exceptionally in saline areas."

Fortunately, based on clear information, we were able to establish a system of equivalency between this classification and further attempts to classify them (see next paragraphs and Table 4).

In addition, we should emphasize that Prodan weas perhaps the first Romanian botanist who scientifically drew attention on the possibility to ameliorate saline soils. Going even deeper, he foreseen the great importance from *Fabaceae* in order to phytoremediate salt-affected areas. This earlier observation is brilliant, if correlated to the observation that these ecosystems are poor in nitrogen, phosphorus and potassium. In the present, we well know the special role played by *Fabaceae* in nitrogen cycle.

It is also worth noting that Prodan accurately described the relationships of several woody species (or shrubs) with salinity. Based on his field observations, he indicated species of *Ulmus, Quercus, Morus* as vegetating on saline areas; apart from the relativity of his ecological notes in this direction, several given details are of great importance. He foresaw – without any experimental data – that salt concentration and the position of root system in the soil would be the key of occurrence and survival of such species in salinized ecosystems. He also underlined that seed germination is induced after rainy periods, when salts are more diluted thus allowing to seedlings to survive; after developing the rooting system, these woody species would prefer more elevated areas to the periphery of salt marshes, in order to avoid the high salinity conditions from the center of ecosystem. These early observations (made in 1922) are very important in order to understand his holistic and anticipatory vision about halophytes ecology.

Emilian Țopa, the creator of the first modern halophytes' classification

His work in halophytes (1939, briefly revised in 1954) is very valuable, because is one of the few monographs focused on distribution of salinized areas (*saraturi*), their halophylous vegetation, and ecology. It is perhaps the first Romanian work where the "standard" classification of halophytes is explicitly given with appropriate definitions.

Thus, halophytes are classified according to their response to salinity in: *obligatory, preferential, supporting, and accidental* halophytes (this classification is also mentioned by Waisel, 1972 in his monograph). However, unfortunately, the Romanian author is not very clear about the origin of this classification; reading the text is difficult to affirm if this classification is original or perhaps was adopted from other authors. Some footnotes in his thesis could suggest that at least a part of these "classic" terms were previously used by several botanists. Anyway, the way of approaching and describing these halophytes groups are very accurate and logical. Actually, this was the language that was adopted and used by most of further Romanian botanists. Of course, some of them have used other classifications, but not Romanian as origin; sometimes, they have modified this basic Țopa's basic classification and used it accordingly.

He defines obligatory halophytes as those plants growing in salty habitats requiring a considerable salts amount for their development, at least for a short period of the year. The preferential halophytes **prefer** the saline environments where they find the "optimal living conditions"; the supporting halophytes endure the salts but do not manage to compete with local vegetation; the accidental halophytes rich **accidentally** the salty habitats, but are not able to survive there.

● These halophytes definition and classification given by Țopa are very interesting and relevant, because they show the logic and correspondent relation of halophytes with soil salinity. They seem to be an etymological characterization of halophyte classes (see our underlining above). Anyway, we consider the expression "preferential halophytes" a little bit inconvenient; we believe that all halophytes (as their etymology emphasizes) *prefer* a relatively high salt concentration in soil solution, in respect with glycophytes. In this context, despite the fact that "preferential halophytes" show an inferior graduation, the expression could be confusing. Moreover, the "optimal living conditions" is again a very difficult defining term. To the rest, the "supporting" and "accidental" classifications correspond to a close reality plants-soil.

● We believe that the "obligatory" term, related to halophytes represents also a imprecise and equivocally definition. For instance, Bucur (1957) suggests the use of "obligate" and not "obligatory" expression (!). Our opinion is that both the adjectives are not really adequately chosen.

Following the Țopa's work, there was a gap in the monographic study of halophytes, albeit many floristic papers including references about halophytes have been conducted in parallel.

Bucur's and collaborators work in halophytes (1957b; 1960a,b; 1961) is by far the most significant from all papers ever written in Romania. Perhaps this would deserve a distinct chapter, but this is not the place for it. The paragraphs dedicated to this brilliant work are meant to rse awareness of the great importance and implications in halophytes knowledge. This research was conducted in order to establish the halophytic degree (affinity of plant species for soil salinity) in a huge number of plants naturally growing in saline areas from Jijia-Bahlui. Thus, a number of over 400 (!) salt tolerant plants have been investigated in relation to their corresponding salinity from rhizosphere. For this purpose, the salinity in the rhizosphere of every found species was measured by two distinct methods, each one applied in different variants. In this way, they were able to identify the salinity threshold of each species (minimal, optimal and maximal values). In addition, several patterns in the plant behavior in terms of salinity level were clearly and logically described. Finally, based on these consistent data, a new completely original system of halophytes' classifications has been proposed (Table 3).

This classification is perhaps among the most consistent and harmonious of all existing worldwide. Many systems of classifications are based on arbitrary criteria (see extended comments in Grigore, 2008b), also taking into consideration the numerical values chosen for describing the thresholds of salinity where halophytes are to be included.

Moreover, with respect to other major classifications previously made by Prodan (1939) and Ţopa (1939; 1954), we figured a system to harmonize all these classifications (Table 4). This is useful for understanding the ecological descriptions included in the main part of our work.

Going deeply and having many data at its disposal, Bucur and collaborators proposed some hierarchies within euhalophytes (Table 5) and neohalophytes (Table 6), in respect to soil salinization degree. These specifications are also relevant for the ecological description given by Bucur et al. (1960a, 1961).

Table 3. Classification of halophytes according to Bucur and collaborators (1957a)

<table>
<tr><td>HALOPHYTES
(Plants vegetating on saline environments)</td><td>1. Euhalophytes: halophytes strictly adapted to salinity (strictly obligate to salinity) are exclusively preferential and grow only on salinized environments, with the entire or a part of radicular system, both as seedlings and as mature plants;
2. Neohalophytes: plants able to adapt to salinity; plants to be adapted to halophytic environment; they are supporting and preferential, living both on non-salinized and salinized media, with the entire or a part of radicular system.</td></tr>
<tr><td>NON-HALOPHYTES
(Plants that not grow on saline environments)</td><td>Plants non-adapted to salinized media, non-tolerant to high concentrations of salinity. In relation to concentrations more than 30-40 % milligrams of soluble salts, they could be tolerant and preferential.</td></tr>
</table>

Table 4. Equivalence between major Romanian systems of halophytes classification (Grigore, 20008a)

<table>
<tr><th>PRODAN (1939)</th><th>ȚOPA (1954)</th><th colspan="3">BUCUR et al. (1957a)</th></tr>
<tr><td>“first category”</td><td>obligatory</td><td>obligatory</td><td>euhalophytes</td><td rowspan="3">HALOPHYTES</td></tr>
<tr><td rowspan="2">“second category”</td><td>preferential</td><td rowspan="2">Facultative halophytes (plants able to adapt to salinity)</td><td rowspan="2">neohalophytes</td></tr>
<tr><td>supporting</td></tr>
<tr><td>“third category”</td><td>accidental</td><td colspan="2">Supporting (tolerant to salinity)</td><td>NON-HALOPHYTES</td></tr>
</table>

Table 5. Hierarchy of euhalophytes, taking into account the soil' salinization degree in the rizosphere (Bucur *et al.,* 1960a)

Euhalophyte	Soil salinity in the rizosphere (% mg soluble salts)
Very weak	75-95
Weakly/less	95-150
Moderately	150-450
Strongly	450-1400
Very strongly	1400-3400
Excessively	3400-5500

Table 6. Hierarchy of neohalophytes, taking into account the soil' salinization degree in the rizosphere (Bucur *et al.,* 1961)

Tolerant neohalophyte	Soil salinity in the rizosphere (% mg soluble salts)
Very weak	55-75
Weakly/less	75-95
Moderately	95-150
Strongly	150-450
Very strongly	450-1500
Excessively	1500-3500

Unfortunately, the results of Bucur and collaborators work are completely unknown by the foreign scientific community. When some authors cite Romanian papers, they usually refer to Țopa's classification (1939), as Waisel (1972) does, despite the fact that this is not the most relevant and persistent classification ever made by a Romanian botanist.

Post-Bucur era in Romanian halophytes-related works

After the Second World War, in Romania the Communist Party got installed. One of the major objectives of its policy was agriculture, so from that moment on many efforts to improve this integrant part of economy have been done. This included also the salinized areas as a potential source for extending the arable surface of the country. However, it required a good knowledge of these ecosystems, so, together with soil science studies regarding the salinized lands, plenty botanical works in studying halophytes have been done.

Actually, the research carried out by Bucur and collaborators could be included in this economical strategy.

After Bucur only the work of Şerbănescu (1965) is worth noting, whose research on halophytic associations in relation to soil' salinization type are of great interest. He classified these associations in: chloruric, sodic and sulphatic, based on predominant ions found in the soil solution.

2. How this book has been written and how to read it

Apart from these major already discussed works in halophytes (Prodan, 1922, 1939; Ţopa 1939, 1954; Bucur *et al*., 1957, 1960a, 1961; Şerbănescu, 1965) we used as inputs all available papers dealing generally with Romanian vegetation, where some mentions of salt tolerant plants and saline environments have been done. Of course, the list with these papers is not exhaustive. We are seeking for other new inputs.

We selected from some papers all species explicitly mentioned as vegetating in saline environments; we also included those that are not so clearly correlated with saline media. In this case, we extracted them from the general context suggesting that a species is related (in a way or other) to salinity. As a general rule, less halophytic are cited by few authors, thus weakening the affinity for a high level of salinity.

All species with corresponding data have been included in a table that has the follow structure:

Species	Authors with cited species/Synonyms	L. f	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance	Others
Here is the reference species name, according to the Romanian nomenclature (Ciocârlan, 2009). When a given genus has many species, the first mention of it is typed with bold characters, followed by the other species, typed with normal characters. The status of several species, especially mentioned in older botanical works, couldn't be specified. These species are marked with "?" in front of each species. This could be explained by the taxonomic history of that period.	Here are included all mentions made by botanists about the species during time. In order to preserve the historical character of nomenclature evolution, we introduced here the species exactly as they appear in the papers we consulted. The inputs are listed in chronological order. These could appear as subspecies and forms and are given in relation to the reference species, although they might be currently out of current nomenclature. Every species is followed by the author citing it and by the year of paper we extracted the information. We mentioned only the first author's name of papers we consulted but all the co-authors can be found in the reference list. "Flora", followed by a number refers on the volume of Romanian flora monograph (13 volumes, 1952-1976). Sch. Cent.	Life forms (bioforms) could be useful in order to achieve a minimal idea about biology of salt tolerant plants.	Here some short information about halophyte type (according to the classifications above discussed) is given. In addition, several available data referring on affinity for humidity, temperature, trophicity, nitrogen, pH and light are listed. These data are followed by the author (s) and the year of published paper where this information is extracted.	Here several datailed aspects about the ecology of salt tolerant species are included. Also, some data about the habitat and ecological conditions occuring here are mentioned. We followed especially the characterizations made by Bucur et al. (1960a, 1961). But attention should be paid on the fact that this information is restricted to species of halophytes vegetating in a limited area of Romania. Anyway, since here the ecological conditions are not extremely different from various regions of Romania, we consider this data as trustful. When possible, we included our personal observations made in the field; these are marked by "Grigore,	The salinity threshold of each species is of great importance for understanding the degree of adaptation to salinity in each species. Since the Romanian data in this sense are very scarce, we had to rely mainly on Bucur et al. (1957a) results. His results are given in % milligrams soluble salts. The conversion between different ways of expressing salinity level represents in fact another intriguing issue. In the table, values for the salinity threshold are given in two distinct situations: salinity measured on soil surface	This section is for additional data, when we considered that they could be relevant. Here, several data about ecological anatomy of some species is included, such as photosynthetic pathway and other features that could contribute to obtaining a large picture regarding the biology of a given species.

Species	Authors with cited species/Synonyms	L. f	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance	Others
Sometimes, the lack of the author's name, after the cited species, makes almost impossible the effort to precisely identification of that species, in the present context.	(*Schedae ad floram Romaniae Exsiccatum a Museo Botanico Universitatis Clusiensis editam Centuriae*) is followed in the table by the number of Centuria (Centuriae) and by the year when it has been published.			pers. obs."	(rhizosphere) and salinity measured on the top of roots. In both situations, in the table it can be found 3 values, separated by comas: a minimum, optimum and maximum of salinity where salt tolerant plants grows and develop. Sometimes, not all three values are available (explications in the Bucur's paper not given). In this case, we included only existing data, with missing values separated by comas.	

3. Abbreviations and figures in the text

Abbreviations

Life forms:

TH – *Therophyta*
PH – *Phanerophyta*
HD – *Hydrophyta*
H – *Hemycryptophyta*
Ht – *Hemytherophyta*
Ch – *Chamaephyta*
G – *Geophyta*
h-h – *Hydro-helophyta, Hydato-helophyta*

Ann. - annual
Per. - perennial
Bisann. – bi-annual

I categ. – "first category"
II categ. – "second category"
III category – "third category" (for all these three types of halophytes, see explanations from above paragraphs and especially Table 4).
Sch. Cent. = *Schedae ad floram Romaniae Exsiccatum a Museo Botanico Universitatis Clusiensis editam Centuriae*

Figures in the text

All figures included in this work are drawings taken and adapted from *Flora R. P. R. / R. S. R* (1952-1976), except for those of *Halocnemum strobilaceum* (Fig. 26) *Salicornia ramosissima* (Fig. 27), and *Glaux maritima* (Fig. 76), where Romanian data were missing or were considered unsatisfactory. They were adapted from *Flora Iberica*, as a digitalized version (http://www.floraiberica.es/eng/index.php.).

Attention should be pe paid on the fact that these images are not to be used for taxonomical, diagnosis purposes. We selected only several relevant drawings, in order to facilitate the visual perception of this book.

LIST OF ROMANIAN SALT TOLERANT PLANTS

Equisetaceae

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
***Equisetum palustre* L.**	Csuros-Kaptalan 1965; Şerbănescu 1965; Pop 2000	G	Hygrophilous, eurytrophic (Ciocârlan 1988, 1990)	Marshy meadows (Ciocârlan 1988, 1990)		
			Salviniaceae			
***Salvinia natans* (L.) All.**	Popescu 1963; Ştefan 2001b	TH h-h				
			Urticaceae			
***Urtica urens* L.**	Sanda 1978	TH Ann.	Ruderal, nitrophile species (Ciocârlan 1988, 1990)			
			Ceratophyllaceae			
***Ceratophyllum submersum* L. ssp. *haynaldianum* Borb.**	Burduja 1939	HD Per.		Stagnant water (Ciocârlan 1988, 1990)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
			Ranunculaceae			
***Nigella arvensis* L.**	Sanda 1984	TH Ann.	Mesoxerophilous, Subtermophilic (Ciocârlan 1988, 1990)	Segetal, crop weed species (Ciocârlan 1988, 1990)		
Consolida regalis* S. F. Gray ssp. *regalis	*Delphinium consolida* L. – Bucur 1957a, b; Şerbănescu 1965; Sanda 1984	TH Ann.	Mesoxerophilous, Termophile - subtermophilic (Ciocârlan 1988, 1990)	Segetal, ruderal (Ciocârlan 1988, 1990)	1. 35, 75, 710 2. 50, 60-80, 1570	
***Thalictrum minus* L.**	*Thalictrum minus* ssp. *elatum* f. *puberulum* – Prodan 1939; *Thalictrum minus* L – Bucur 1957a; *T. minus* L var. *flexuosum* (Bernh.) Hegi – Todor 1948	H Per.	II categ. (Prodan 1939)		1. , 80, 2. , 80,	
***Clematis integrifolia* L**	Bucur 1957a	H Per.	Eutrophic (Ciocârlan 1988, 1990)		1. , , 110 2. , , 293	
***Myosurus minimus* L. (Fig. 1)**	Fuss 1866; Prodan 1922; Prodan 1923; Guşuleac 1933;	TH Ann.	II categ. (Prodan 1939); Supporting Halophyte (Ţopa	Wet habitats, with stagnant more or less	1. 75, 105, 125 2. 80, 100, 110	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Prodan 1939; Sch. Cent. XIX- XXI 1949 ; Răvăruț 1941; Flora II; Țopa 1954; Prodan 1956; Popescu 1957; Popescu 1957 b; Samoilă 1957; Buia 1959; Pop 1959; Bucur 1961; Bujorean 1961; Andrei 1965; Şerbănescu 1965; Dobrescu 1969; Mihai 1969; Mititelu 1969; Mititelu 1971a; Dobrescu 1973; Pătraşcu 1973; Sanda 1978; Doltu 1979; Mititelu 1987; Sanda 1991; Coste 1993; Ciocârlan 1994; Ciocârlan 2000;		1954, Andrei 1965); Neohalophyte (Bucur 1961)	salinized water in the springs (Ciocârlan 1988, 1990)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Pop 2000; Sârbu 2001					
***Ceratocephala testiculata* (Crantz) Roth**	*Ceratocephalus testiculatus* (Crantz) Roth – Şerbănescu 1965; Mihai 1972; *Ceratocephalus orthoceras* DC. – Bucur 1957 a, b	TH Ann.	Xeromesophilous, subtermophilic, Oligotrophic (Ciocârlan 1988, 1990)	Meadows, arable areas, dry sandy slopes (Ciocârlan 1988, 1990)	1. 288, 178, 311	
***Ranunculus trichophyllus* Chaix**	*Batrachium tricophyllum* (Chaix) Bosch – Bucur 1961; Samú 1982	HD Per.	Neohalophyte (Bucur 1961)			
R. pedatus Waldst. et Kit. (Fig. 2)	Fuss 1866; Brandza 1879-1883; Grecescu 1898; Pax 1919; Prodan 1922; Sch. Cent I 1921; Prodan 1923; Prodan 1939; Isăcescu 1939; Răvăruț 1941; Pop 1959; Şerbănescu 1965; Sanda 1978;	H Per.	I categ. (Prodan 1939); Oligotrophic, Xeromesophilous, sometimes halophylous (Ciocârlan 2000)			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Pop 1980; Mititelu 1987; Mititelu 1988; Coste 1993; Ciocârlan 2000; Pop 2000; Sârbu 2001					
R. ficaria L.	Şerbănescu 1965; *Ficaria verna* Huda – Bucur 1957a	H Per.	Eutrophic, Mesophilous – Mesohygrophilous (Ciocârlan 1988, 1990)			
R. lateriflorus DC. (Fig. 3)	Prodan 1922; Prodan 1923; Prodan 1939; Isăcescu 1939; Flora II; Prodan 1956; Popescu 1957; Popescu 1957 b; Samoilă 1957; Pop 1959; Popescu 1963; Şerbănescu 1965; Csuros 1968; Sanda 1991; Coste 1993; Ciocârlan 2000; Pop 2000	T Ann.	II categ. (Prodan 1939); Hygrophilous, Halophylous (Ciocârlan 1988, 1990)			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	Others
R. polyanthemos L.	Bucur 1957a	H Per.	Mesotrophic, Mesoxerophilous – Mesophilous (Ciocârlan 1988, 1990)		1. , 64, 2. , 96,	
R. polyphyllus Waldst. et Kit. ex Willd.	Prodan 1922; Prodan 1939; Ciocârlan 2000; Sârbu 2001	h – h		Salt marshes (Ciocârlan 1988, 1990)		
R. sardous Crantz (Fig. 4)	Pop 1959; Bucur 1961; Csuros 1961; Popescu 1963; Şerbănescu 1965; Bucur 1966; Răvăruţ 1968; Mihai 1969; Csuros 1970; Mititelu 1987; Coste 1993; Pop 2000; *R. sardous* Crantz var. *mediteraneus* – Prodan 1922; Prodan 1939; *R. pseudobulbosus* Schur - Prodan	T Ann.	Neohaophyte (Bucur 1961; III categ. (Prodan 1939); Mesohygrophilous, Eutrophic (Ciocârlan 1988, 1990)	More or less wet habitats; segetal, rudral species (Ciocârlan 1988, 1990)	1. 46, 80, 430 2. 55, 80-90, 1070	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1922; Prodan 1939					
R. ophioglossifolius Vill.	Prodan 1939	TH Ann.	III categ. (Prodan 1939)	Marshy meadows (Ciocârlan 1988, 1990)		
R. sceleratus L. (Fig. 5)	Prodan 1922; Prodan 1939; Csuros 1947; Bucur 1957a; Răvăruț 1968; Țopa 1969; Mihai 1972; Popescu 1976; Mititelu 1987; Sanda 1991; Ştefan 2001b	TH Ann.	III categ. (Prodan 1939)	Marshes (Ciocârlan 1988, 1990)	1. 100, 110, 340 2. 70, 80, 350	
R. repens L.	Prodan 1956; Pop 1959; Csuros-Kaptalan 1965; Şerbănescu 1965; Mihai 1969; Dobrescu 1973; Sanda 1973; Cîrțu 1977; Mihai 1977; Samú 1982; Mititelu 1987; Pop	H Per.	Eutrophic, Mesohygrophilous – Hygrophilous (Ciocârlan 1988, 1990)	Wet habitats (Ciocârlan 1988, 1990)	1. 60, 100, 380 2. 65, 90, 430	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	2000; Ştefan 2002					
R. acris L.	Pop 2000; *R. stevenii* auct. Ross., non Andrz. ex Besser – Rusu 1972	H Per.		Wet moderatelly meadows (Ciocârlan 1988, 1990)		
R. aquatilis L	Sanda 1991; Pop 2000	HD Per.				
R. bulbosus L.	Isăcescu 1939	H (G) Per.				
R. lingua L.	Ştefan 2001b; Ştefan 2006	h-h, Per.		Marshes (Ciocârlan 1988, 1990)		
***Adonis vernalis* L.**	Prodan 1922; Prodan 1939; Bucur 1961	H Per.	III categ. (Prodan 1939); Neohalophyte (Bucur 1961); Xerophilous – Xeromesophilous, Termophile – Subtermophilic (Ciocârlan 1988, 1990)		1. , 30, 2. , 40,	
A. aestivalis L	Şerbănescu 1965	TH	Mesoxerophilous,			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
		Ann.	Calciphilous, subtermophilic (Ciocârlan 1988, 1990)			
Papaveraceae						
***Papaver rhoeas* L.**	Bucur 1957a	TH Ann.	Eutrophic, Mesoxerophilous, Subtermophilic (Ciocârlan 1988, 1990)		1. 40, 55, 65 2. 40, 55, 60	
Caryophyllaceae						
***Arenaria serpyllifolia* L.**	Samoilă 1960; Bucur 1967; Răvăruț 1968; Rusu 1972; Sanda 1984; *Arenaria serpillifolia* L. – Şerbănescu 1965	TH Ann.	Xerophilous – Xeromesophilous (Ciocârlan 1988, 1990)	Sandy areas, segetal, ruderal species (Ciocârlan 1988, 1990)		
***Scleranthus annuus* L.**	Prodan 1922; Prodan 1939; Prodan 1956; Samoilă 1957; Pop 1959; Samoilă 1960; Şerbănescu 1965; Răvăruț	TH Ann.	III categ. (Prodan 139)	Sandy areas, with less chalk (Ciocârlan 1988, 1990)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1968; Sanda 1978; Sanda 1990b; Sanda 1991; Pop 2000					
S. verticillatus Tausch	Prodan 1922; Prodan 1939		III categ. (Prodan 1939)			
***Sagina maritima* G. Don.**	Ciocârlan 1994; Ciocârlan 2000; Sârbu 2001					
***Holosteum umbellatum* L.**	Pop 1959; Andrei 1965; Şerbănescu 1965; Rusu 1972; Coste 1993; Pop 2000; *Holosteum umbellatum*. f. *glabrum* O. Ktze. – Bucur 1957a, b	TH Ann.		Ruderal and segetal species (Ciocârlan 1988, 1990)		
***Stellaria media* (L.) Vill.**	Pax 1919; Bucur 1957a; Şerbănescu 1965; Mihai 1969	TH-Ht; Ann. – Bisann.			1. ,100, 2. ,790,	
S. graminea L.	Şerbănescu 1965; Pop 2000	H Ann.	Mesophilous – Mesohygrophilous (Ciocârlan 1988, 1990)			
***Myosoton aquaticum* (L.)**	*Stellaria aquatica* (L.) Scop. – Rusu	H Ann.		Riversides (Ciocârlan 1988,		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
Moench	1972			1990)		
***Cerastium dubium* (Bast.) Guépin** (Fig. 6)	Doltu 1983; Mititelu 1987; Sanda 1990b; Sanda 1991; Coste 1993; Ciocârlan 1994; Pop 2000; Sârbu 2001; *C. anomalum* Waldst. & Kit. – Grecescu 1898; Pax 1919; Prodan 1922; Prodan 1939; Răvăruț 1941; Todor 1947; Flora II; Prodan 1956; Pop 1959 ; Bucur 1961; Bujorean 1961; Andrei 1965; Şerbănescu 1965; Răvăruț 1968; Mititelu 1971a; Mihai 1972; Rusu 1972; Pătraşcu 1973; Doltu 1979;	TH Ann.	II categ. (Prodan 1939); Neohalophyte (Bucur 1961)	More or less salty habitats, temporarily flooded (Ciocârlan 1988, 1990); Wet places, sandy and salinized meadows (Prodan 1922)	1. 60, 90, 340 2. 55, 100, 600	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Coste 1993; Ciocârlan 2000					
C. fontanum Baumg.	*C. caespitosum* Gilib. Ex Asch., nom. Illeg. – Bucur 1957a; Şerbănescu 1965	Ch. – H Per.	Mesophilous (Ciocârlan 1988, 1990)	Meadows (Ciocârlan 1988, 1990)	1. , , 45 2. , , 45	
C. brachypetalum Pers.	Pop 1959; Coste 1993; Pop 2000; *C. tauricum* Spreng. – Guebhard 1848	TH Ann.	Oligotrophic – Mesotrophic, Mesoxerophilous, Subtermophilic; Pioneer species (Ciocârlan 1988, 1990)			
C. semidecandrum L.	Pop 2000	TH Ann.	Pioneer species (Ciocârlan 1988, 1990)	Sandy soils (Ciocârlan 1988, 1990)		
C. pumilum Curtis	Pop 1959; Samoilă 1960; Sanda 1978; Coste 1993; Pop 2000	TH Ann.	Pioneer species (Ciocârlan 1988, 1990)	Sandy soils (Ciocârlan 1988, 1990)		
C. glomeratum Thuill.	Prodan 1956; Pop 1983	TH Ann.	Eutrophic, Mesohygrophilous (Ciocârlan 1988,	Meadows, sandy, more or less wet places (Ciocârlan		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
			1990)	1988, 1990)		
? *C. ovatum* Hoppe	Guebhard 1848					
***Gypsophila muralis* L.** (Fig. 7)	Prodan 1922; Prodan 1923; Guşuleac 1933; Prodan 1939; Todor 1948; Prodan 1956; Bucur 1957a, b; Samoilă 1957; Pop 1959; Bucur 1961; Bujorean 1961; Popescu 1963; Şerbănescu 1965; Răvăruț 1968; Mititelu 1971a; Mititelu 1972; Popescu 1981; Sanda 1984; Mititelu 1987; Mititelu 1988; Sanda 1991; Coste 1993; Ciocârlan 1994; Ciocârlan 2000; Pop 2000;	TH Ann.	II categ. (Prodan1939); Neohalophyte (Bucur 1961)	Meadows, temporarily flooded less salinized places, (Ciocârlan 1988, 1990)	1. 15, 60, 185 2. 25, 230, 830	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Sârbu 2001					
G. perfoliata L.	*G. trichotoma* Wender. – Prodan 1922; Prodan 1939; Popescu 1975; Sanda 1990a; *G. scorzonerifolia* auct. Non Ser. – Flora II; Sanda 1973	Ch Per.	I categ. (Prodan 1939)	Sandy soils (Ciocârlan 1988, 1990); In sandy less salinized marshes; intermediary between halophytes and psammophytes (Prodan, 1922)		
Vaccaria hispanica **(Mill.) Rauschert**	*Vaccaria pyramidata* Medik. – Bucur 1957a	TH Ann.		Segetal, ruderal species (Ciocârlan 1988, 1990)	1. , 55, 2. ,55,	
Dianthus collinus **Waldst et Kitt.**	Prodan 1922	H Per.				
D. guttatus M. Bieb (Fig. 8)	Bucur 1957a; Turenschi 1964; Şerbănescu 1965; Răvăruț 1968; Turenschi 1970; Mititelu 1971a; Mititelu 1972;	H Per.	II categ. (Prodan 1939)		1. 60, 80, 205 2. 70, 140, 1760	

Species	**Authors with cited species/Synonyms**	**Life form**	**Halophyte type/ecological type**	**Habitat / Ecological spectrum**	**Salinity tolerance** **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	**Others**
	Pătraşcu 1973; Mititelu 1975b; Mititelu 1978-1980; Doltu 1983; Mititelu 1987; Sanda 1990b; Sanda 1991; Pop 2000; *D. guttatus* Bieb., f. *taratinoensis* (Prod. et. Borz) Sanda; f. *latifolius* (Prod.) Sanda; f. *porciusii* (Prod.) Sanda – Doltu 1984; *D. pseudogrisebachii* Grecescu – Prodan 1922; Prodan 1939					
D. membranaceus Borbás	*Dianthus rehmanii* Blocki – Prodan 1939; Bucur 1957a	H Per.	III categ. (Prodan 1939); Xerophilous – Xeromesophilous (Ciocârlan 1988, 1990)		1. 60, , 75 2. 70, , 90	
D. *pratensis* M. Bieb. ssp.	*D. racovitzae* Prodan – Flora II;	H Per.				

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
racovitzae (Prodan) Tutin (Fig. 9)	Andrei 1965; Şerbănescu 1965					
***Silene multiflora* (Waldst. et Kitt.) Pers.**	Prodan 1922; Prodan 1939; Ciocârlan 1994; Ciocârlan 2000	H. Per	III categ. (Prodan 1939)	Wet meadows, sometimes salinized, sandy soils (Ciocârlan 1988, 1990); Found in sandy, wet salinized meadows (Prodan, 1922)		
S. viscosa (L.) Pers.	Pop 2000; *Melandrium viscosum* (L.) Čelak – Flora II	Ht-H, Bisann-Per.	Mesohygrophilous (Ciocârlan 1988, 1990)			
***Lychnis flos-cuculi* L.**	Guşuleac 1933; Şerbănescu 1965; Samú 1982	H Per.	Mesohygrophilous – hygrophilous (Ciocârlan 1988, 1990)	Wet, marshy meadows (Ciocârlan 1988, 1990)		
***Spergularia media* (L.) C. Presl** (Fig. 10)	Grecescu 1898; Prodan 1922; Mititelu 1978-1980 Doltu 1983; Doltu 1984; Mititelu	H Per.	I categ. (Prodan 1939); Euhalophyte (Bucur 1960a); Halophyte, Mesohygrophilous	Coastal salt-marshes, salt lakes (Ciocârlan 1988, 1990); Annual plant,	1. 380, 510, 970 2. 210, 850,1830	C_3 species (Grigore, 2010a)

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1987; Popescu 1987; Sanda 1990; Sanda 1991; Sanda 1992; Sârbu 1995; Ciocârlan 2000 ; Pop 2000; Sârbu 2001; *S. marginata* (Kitt.) Murb. – Grecescu 1898; Sch. Cent. XII-XIV 1934; Prodan 1939; Răvăruț 1941; Todor 1947; Flora II; Bucur 1960; Andrei 1962; Guşuleac 1962; Andrei 1965; Mititelu 1965; Şerbănescu 1965; Bucur 1966; Sanda 1967; Răvăruț 1968; Dihoru 1969; Turenschi 1970; Ciocârlan 1972; Mihai 1972;		(Ciocârlan 1988, 1990)	mesophilous to hygrophilous, mesothermophile heliophilous, alkaliphilous; it develops on salinized water meadow soils (Bucur 1960a). Plant with shallow root, hygrophilous, with succulent leaves (Grigore and Toma 2010 b) vegetating regulaily as isolated individuals, preferring areas covered by a rich vegetation (Grigore pers. obs.). In Romania, this		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Dobrescu 1973; Popescu 1973; Pătraşcu 1973; Sanda 1973; Popescu 1975; Popescu 1976; Ivan 1978; Sanda 1978; Doltu 1979; Sanda 1979; Pop 1980; Popescu 1981; Popescu 1984; Sanda 1984; Sanda 1990b; Sanda 1991; *S. marginata* X *S. salina* Buchenau – Săvulescu 1925; *S. maritima* (All.) Chiou – Ciocârlan 1994; *Lepigonum marginatum* Foch. – Fuss 1866; *Lepigonum medium* Whlbg. – Fuss 1866			species is probably the most relevant halophyte from *Caryophyllaceae*.		
S. rubra (L.) J. et. C. Presl. (Fig.	Prodan 1922; Prodan 1939;	TH-H Ann. –		Degraded meadows,		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
11)	Răvăruț 1941; Csuros 1968; Mititelu 1972; Popescu 1971; Ciocârlan 2000	Per.		ruderal, sandy soils, with less chalk, sometimes salinized (Ciocârlan 1988, 1990)		
S. salina J. et C. Presl. (Fig. 12)	Brandza 1879-1883; Gușuleac 1933; Țopa 1935; Prodan 1937; Prodan 1939; Țopa 1939; Răvăruț 1941; Sch. Cent. XXVI 1944; Todor 1947; Țopa 1954; Flora II; Buia 1959; Bujorean 1961; Andrei 1962; Popescu 1963; Pall 1964; Andrei 1965; Csuros-Kaptalan 1965; Șerbănescu 1965; Borza 1966; Sanda 1967; Mihai 1969; Mititelu	TH-H Ann. – Per	I categ. (Prodan 1939); Obligatory Halophyte (Țopa 1954, Andrei 1965); Halophylous, mesophilous (Ciocârlan 1988, 1990)	Salinized meadows (Ciocârlan 1988, 1990)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1969; Țopa 1969; Ciocârlan 1972; Mihai 1972; Mititelu 1972; Rusu 1972; Cristurean 1973; Pătraşcu 1973; Mititelu 1975b; Popescu 1976; Mihai 1977; Ivan 1978; Doltu 1979; Mititelu 1978-1980; Pop 1980; Pop 1983; Sanda 1984; Sanda 1991; Coste 1993; Ciocârlan 1994; Sârbu 1995a; Burac 1997; Ştefan 2001a; Ştefan 2002; *S. marina* (L.) Griseb. – Hacq. 1790-96; Prodan 1922; Borza 1964; Doltu 1983; Doltu 1984; Mititelu 1987;					

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Sanda 1991; Ştefan 1995b; Burac 1997; Ciocârlan 2000; Pop 2000; Ştefan 2001b; *Arenaria salina* Ser. – Guebhard 1848					
***Agrostemma githago* L.**	Bucur 1957a; Şerbănescu 1965	TH, Ann			1. 35, 45, 70 2. 30, 50, 80	
***Herniaria odorata* Andrz.**	Prodan 1939		II categ. (Prodan 1939)			Previously cited from Basarabia (Ciocârlan, 2009) [In the present, Basarabia belongs to Republic of Moldova]
H. glabra L.	Rusu 1972; Popescu 1981	TH-H Ann. – Per.		Meadows, sandy areas (Ciocârlan 1988, 1990)		
***Moenchia mantica* (L.) Bartl.**	*Moenchia erecta* Fl. Wett. – Brandza 1879 -1883					

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
			Amaranthaceae			
***Amaranthus retroflexus* L.**	Bucur 1957a, b; Bucur 1961; Şerbănescu 1965; Pop 1969b; Rusu 1972	TH Ann.	Neohalophyte (Bucur 1961); Eutrophic, nitrophilic, mesoxerophilous (Ciocârlan 1988, 1990)	Ruderal and segetal species (Ciocârlan 1988, 1990)	1. 35, 70, 185 2. 30, 90, 1140	
A. albus L.	Prodan 1922; Prodan 1939; Şerbănescu 1965	TH Ann.	III categ. (Prodan 1939); Pioneer species, Eutrophic, xerophilous – Mesoxerophilous (Ciocârlan 1988, 1990)			
A. blitoides S. Watson	Şerbănescu 1965	TH Ann.	Xerophilous, termophile (Ciocârlan 1988, 1990)			
			Chenopodiaceae			
***Polycnemum arvense* L.** (Fig. 13)	Prodan 922, Prodan 1939; Isăcescu 1939; Ţopa 1954; Samoilă 1957;	TH Ann.	II categ. (Prodan 1939); Accidental Halophyte (Ţopa 1954);	Sandy soils (Ciocârlan 1988, 1990)	1. 15, 70, 210 2. 35, 65, 275	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Bucur 1961; Andrei 1965; Turenschi 1970; Sanda 1991; Coste 1993; Pop 2000; *Polycnemum verrucosum* Láng – Flora I		Neohalophyte (Bucur 1961)			
P. majus A. Braun	Bucur 1957a, b	TH Ann		Sandy soils (Ciocârlan 1988, 1990)		
Beta trigyna **Waldst. et Kit.**	Pax 1919	H Per.				
Chenopodium glaucum **L.** (Fig. 14)	Brandza 1879-1883; Prodan 1922, Prodan 1939; Flora I; Bucur 1961; Popescu 1963; Andrei 1965; Csuros-Kaptalan 1965; Şerbănescu 1965; Mihai 1969; Pop 1969b; Pătraşcu 1973; Popescu 1976;	TH Ann.	II categ (Prodan 1939); Neohalophyte (Bucur 1961)	More or less wet sometimes salinized habitats, (Ciocârlan 1988, 1990)	1. 65, 470, 530 2. 120, 130, 375	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Sanda 1977; Ivan 1978; Doltu 1979; Pop 1983; Popescu 1984; Sanda 1984; Mititelu 1987; Popescu 1987; Sanda 1990b; Sanda 1991; Ciocârlan 1994; Ciocârlan 2000; Pop 2000; Sârbu 2001; Ştefan 2002; *Blitum glaucum* Koch – Grecescu 1898					
C. foliosum (Moench) Asch.	Prodan 1922	TH Ann.				
C. album L.	Prodan 1922; Prodan 1939; Ţopa 1954; Bucur 1961; Şerbănescu 1965; Bucur 1966; Pop 1969b; Mititelu 1972; Rusu 1972; Dobrescu 1973 ; Mihai 1977 ; Sanda	TH Ann.	III categ. (Prodan 1939); Supporting Halophyte (Ţopa 1954); Neohalophyte (Bucur 1961); Eutrophic, mesophilous, nitrophilic	A typical ruderal plant; in saline soils is less branched (Prodan, 1922)	1. 30, 75, 1220 2. 25, 80, 1615	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1991; *C. album* L. ssp. *viride* (L.) Murr – Bucur 1957a, b		(Ciocârlan 1988, 1990)			
C. urbicum L.	Prodan 1939; Bucur 1960; Bucur 1957a, b; Bucur 1960b; Pall 1964; Rusu 1972; Sanda 1991; Coste 1993; Sârbu 2001	TH Ann	III categ. (Prodan 1939); Euhalophyte (Bucur 1960a); Nitrophilic, mesophilous (Ciocârlan 1988, 1990)	Mesophilous - xerophilous, mesothermophile, heliophilous, less sciophilous, alkaliphilous; it develops in saline environments with humid soil' surface; indicates a clay soil, less salinized from surface to the depth of the soil; thse soils could be cultivated with crops, beet, sunflower (Bucur 1960a)	1. 35, 230, 455 2. 45, 170, 1455	
C. vulvaria L.	Bucur 1957a	TH	Mesoxerophilous,		1. 70, 110, 265	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
		Ann.	nitrophilic (Ciocârlan 1988, 1990)		2. 80, 120, 385	
C. rubrum L.	Edel 1835; Prodan 1922; Prodan 1939; Flora I; Ciocârlan 1994; Ciocârlan 2000; Sârbu 2001	TH Ann.	III categ (Prodan 1939)	Wet less salinized ruderals habitats (Ciocârlan 1988, 1990)		
C. chenopodioides (L.) Aellen	Ciocârlan 2000; *C. crassifolium* Hornem. – Prodan 1939	TH Ann.	II categ. (Prodan 1939)	Wet salinized habitats (Ciocârlan 1988, 1990)		
C. botrys L.	Ciocârlan 1994	TH Ann.				
C. polyspermum L.	Sârbu 2001; *C. polyspermum* L. f. *simplex* – Prodan 1956	TH Ann.	Eutrophic, Mesohygrophilous (Ciocârlan 1988, 1990)			
C. hybridum L.	Pall 1964; Rusu 1972	TH Ann.	Eutrophic, Mesophilous (Ciocârlan 1988, 1990)	Segetal species (Ciocârlan 1988, 1990)		
? *C. maritimum*	Edel 1835					
***Atriplex rosea* L.**	Schur 1885;	TH	II categ. (Prodan	Ruderal, sandy,		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Grecescu 1898; Prodan 1922; Flora I; Țopa 1969; Sanda 1973; Pop 1983; Mititelu 1987; Ciocârlan 2000; Sârbu 2001; *A. roseum* - Pax 1919; Prodan 1939	Ann.	1939)	sometimes less salinized places (Ciocârlan 1988, 1990)		
A. littoralis L. (Fig. 15)	Edel 1835; Fuss 1866; Brandza 1879 – 1883; Schur 1885; Grecescu 1898; Prodan 1922; Sch. Cent. XVII-XVIII 1938; Csuros 1947; Flora I; Bucur 1957a; Bucur 1957a b; Bucur 1960b; Bujorean 1961; Csuros 1961; Popescu 1963; Pall 1964; Pall 1964 b; Mititelu 1965; Şerbănescu 1965;	TH Ann.	I categ. (Prodan 1939)	Salinized soils (Ciocârlan 1988, 1990); Prefers wet salinized areas, where water could be persistent for short time but later is drained (Prodan, 1922); Annual plant, mesophilous, heliophilous and less sciophilous; strictly alckaliphilous,	1. 35, 400, 965 2. 90, 240, 1470	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Borza 1966; Popescu-Domogled 1966; Bucur 1967; Morariu 1967; Mititelu 1971a; Mihai 1972; Mititelu 1972; Pătraşcu 1973; Mititelu 1975b; Cîrțu 1977; Doltu 1979; Pop 1980; Pop 1983; Popescu 1984; Antohe 1986; Mititelu 1987; Pop 1988; Sanda 1990b; Sanda 1991; Coste 1993; Ciocârlan 1994; Ciocârlan 2000; Pop 2000; *A. littorale* L. – Isăcescu 1939; Prodan 1939; Răvăruț 1941; Țopa 1939; Samoilă 1957; Bucur1966;			mesothermophile weakly to strongly euhalophilous. It develops on superficially – weakly to strongly salinized areas – ocuring in water meadows, with clay, humid soil. It suggest a dryed or humid saline soil in his surface (Bucur 1960a); We think that this is a species with a large ecological spectrum, occuring also in ruderalized and less salinized areas, where an		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Mititelu 1969; Sârbu 2001; Ştefan 2002; *A. litoralis* L. var. *angustissima* Moqu., var. *serrata* (Huds.) – Todor 1947; *A. littoralis* L. f. *serrata* – Ţopa 1969			anthropic activity may be involved; perhaps it is also a nitrophile species, since we noticed it well grown where residuals rich in nitrogen exist (Grigore pers. obs.)		
A. prostrata Boucher ex DC. (Fig. 16)	Ciocârlan 1994; Ciocârlan 2000; *A. hastata* auct., non L. – Buj. 1934; Csuros 1947; Flora I; Bucur 1957a; Buia 1959; Csuros-Kaptalan 1965; Sanda 1967; Mihai 1969; Mititelu 1971a; Mititelu 1972; Dobrescu 1973; Pătraşcu 1973; Mititelu	TH Ann.	I categ. (Prodan 1939); Supporting Halophyte (Ţopa 1954)	Wet, more or less salinized habitats (Ciocârlan 1988, 1990); Found in wet, clay alluvial soils and in wet salinized sandy soils (Prodan, 1922); Annual plant, relatively widespread, mesophilous to xerophilous, heliophilous,	1. 65, 1040,2410 2. 65, 570, 2430	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1975b; Popescu 1976; Cîrțu 1977; Pop 1977; Ivan 1978; Doltu 1979; Mititelu 1978-1980; Pop 1980; Pop 1983; Mititelu 1987; Mititelu 1988; Sanda 1991; Sârbu 1995a; Pop 2000; Sârbu 2000; Sârbu 2001; Șt 2002; *A. hastatum* – Prodan 1922; Prodan 1939; Isăcescu 1939; Răvăruț 1941; Țopa 1954; Prodan 1956; Șerbănescu 1965; *A. hastata* L. var. *microtheca* C.F. Schumach – Doltu 1983; *A. microtheca* Moqu-Tand - Prodan 1939; *A.*			alkaliphilous; weakly to strongly euhalophilous. It develops on ruderalized salty areas, having a humid les or strongly salinized soil in its surface. This species indicates a clay salty area, with dry or humid soil, whose salinity largely varies. Sometimes, these soils could be cultivated with autumn cereals (Bucur 1960a); this is a halophyte with a large ecological		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	hastata L. var. *heterosperma* Gren. Et. Godr., var. *microtheca* Schum., f. *salina* Wallr. – Todor 1947; *A. hastata* L. f. *salina* – Țopa 1969; *A. microsperum* W. K. – Pax 1919; Prodan 1922 ; *A. hastata* L. var. *heterosperma* Gr. Et Godr- Sch. Cent. XXVIII 1946; *A. hastata* L. f. *triangularis* (Willd.) A. et G. – Borza 1964; *A. hastata* L., var. *microtheca* C. F. Schumach; f. *salina* Wallr – Doltu 1984; *A. latifolia* Wahlenb. – Fuss			spectrum, which tends to be considered as a ruderal halophylous species; it vegetates on moderately himid saline soils, but we never found it in dry salty soils. We think that those older data considereing it as a obligatory halophyte must be carefully chacked (Grigore pers.obs.)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1866; Brandza 1879 - 1883; *A. triangularis* W. – Guebhard 1848; Schur 1885; *A. hastata* L. – Ciurchea 1962b; Sanda 1979; Sanda 1990b; Ştefan 1995a; Ştefan 1995b; *A. hastata* L., var. *microtheca* – Samú 1982					
A. tatarica L. (Fig. 17)	Brandza 1879 – 1883; Grecescu 1898; Sch. Cent. XVII-XVIII 1938; Bucur 1961; Flora I; Andrei 1962; Popescu 1963; Pall 1964; Andrei 1965; Şerbănescu 1965; Bucur 1966; Sanda 1967; Răvăruț 1968; Mititelu	TH Ann.	I categ. (Prodan 1939); Neohalophyte (Bucur 1961); Preferential Halophyte (Țopa 1954; Andrei 1965); Eutrophic, Nitrophilic, Mesoxerophilous, Preferential Halophyte	Meadows, ruderal, sandy more or less salinized areas (Ciocârlan 1988, 1990); A common species found near to anthropic places but can also occur in salinized drained marshes	1. 45, 230, 1375 2. 55, 450, 2420	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1969; Pop 1969a; Ţopa 1969; Turenschi 1970; Mititelu 1971a; Mititelu 1972; Mihai 1972; Dobrescu 1973; Pătraşcu 1973; Popescu 1976; Ivan 1978; Sanda 1978; Doltu 1979; Mititelu 1978-1980; Pop 1980; Pop 1983; Popescu 1984; Sanda 1984; Mititelu 1987; Popescu 1987; Sanda 1990b; Sanda 1991; Ciocârlan 1994; Sârbu 1995a; Ciocârlan 2000; Pop 2000; Sârbu 2001; Şt 2002; *A. tataricum* L. var. *diffusa* Grecescu –		(Ciocârlan 1988, 1990)	(Prodan, 1922)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Prodan 1939; *A. tataricum* L. – Prodan 1922; Răvăruț 1941; Țopa 1954; Prodan 1956; Bucur 1957a; Samoilă 1957; *A. tatarica* var. *diffusa* - Andrei 1962; *A. tatarica* L. var. *discolor* (Koch) Graebn., f. *integra* (Moq.) Gürke, f. *sinuata* (Moq.) Gürke – Doltu 1983; *A. tatarica* L. var. *discolor* (Koch) *Atriplex tatarica* G. f. *sinuata* (M.B.) Gürke, f. *obtusiloba* Beck, f. *integra* (Moqu.) Gürke – Todor 1947; *A. tatarica* L. var. *diffusa* (Terr.)					

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Gürke, f. *salina* I. Mor – Oescu 1957; *A. tatarica* L. var. *discolor* (Koch) Graebn; f. *sinuata* (Moq.) Gürke – Doltu 1984; *A. laciniata* L. – Fuss 1866; Schur 1885					
A. oblongifolia Waldst. et Kit.	Răvăruț 1968; Mititelu 1972; *A. oblongifolium* – Pax 1919; Mititelu 1987	TH Ann.				
A. patula L.	*A. patulum* L. – Prodan 1922; Prodan 1939; Țopa 1954; Prodan 1956; *A. patulum* L. ssp. *microspermum*, Prodan 1939; *A. patula* L. – Mititelu 1987; Coste 1993; Ciocârlan 2000; *A. patula* L. var. *erecta* (Huds.)	TH Ann.	III categ. (Prodan 1939); Supporting Halophyte (Țopa 1954)			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Lange, and f. *angustissima* Gren et Godr. – Todor 1947; *A. patula* L. var. *erecta* (Huds.) Lange – Doltu 1984; *A. microsperma* Waldst. & Kit. – Grecescu 1898					
A. sagittata Borkh.	*A. nitens* Schkuhr. – Brandza 1879 – 1883	TH Ann.				
? A. mucronata	Edel 1835					
***Halimione pedunculata* (L.) Aellen** (Fig. 18)	Sanda 1990b; Sanda 1991; Sanda 1992; Ciocârlan 1994; Sârbu 1995a; Ciocârlan 2000; Pop 2000; Sârbu 2001; *Obione pedunculata* (L.) Moq. – Grecescu 1898; Prodan 1922; Sch. Cent. II 1922;	TH Ann	I categ (Prodan 1939); Obligatory Halophyte (Țopa 1954)	Coastal and inland salines (Ciocârlan 1988, 1990)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Prodan 1939; Isăcescu 1939; Flora I; Țopa 1954; Guşuleac 1962; Andrei 1965; Şerbănescu 1965; Mihai 1972; Ivan 1978; Doltu 1979; Popescu 1981; Popescu 1984; Sanda 1984; Popescu 1987; Sanda 1990a; Sanda 1990b; Sârbu 2000; Ştefan 2001a; Ştefan 2002; *H. pedunculata* (L.) Aellen f. *triloba* Beck, f. *capselliformis* Beck, f. *verruculosa* Mor – Doltu 1983; Doltu 1984; *Halimus pedunculatus* Wallr.					

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	– Schur 1885					
H. verrucifera (M. Bieb.) Aellen (Fig. 19)	Mititelu 1978-1980; Mititelu 1987; Sanda 1990b; Sanda 1991; Ciocârlan 1994; Sârbu 1995a; Ciocârlan 2000; Pop 2000; Sârbu 2001; *H. verrucifera* (M. Bieb.) Aellen var. *latifolia* Fenzl, var. *angustifolia* Fenzl. – Doltu 1984; *Obione verrucifera* (M. Bieb.) Moq. - Țopa 1939; Răvăruț 1941; Flora I; Țopa 1954; Dobrescu 1957; Moşneagă 1958; Bucur 1960; Mititelu 1965; Şerbănescu 1965; Bucur 1966;	PH Per.	I categ. (Prodan 1939); Obligatory Halophyte (Țopa 1954); Euhalophyte (Bucur 1960a)	Coastal and inland salines (Ciocârlan 1988, 1990); A rare species, mesophilous to xerophilous, mesothermophile - megathermophilic, heliophilous, strongly alkaliphilous, strongly euhalophilous (Bucur 1960a). This is a xero-halophyte, occuring only in very salinized areas, as izolated individuals or small patches, especially in full	1. 180,250,560 2. 170, 920,3220	C_3 species (Grigore and Toma 2010b); *According to our observations, conducted in the field in saline areas from Romania and Spain, *H. portulacoides* is a different species from *H. verrucifera.* Even the foliar anatomy is different in these two species (Grigore and Toma, unpublished data)

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Mititelu 1967; Mititelu 1971a; Ciocârlan 1972; Doltu 1979; Popescu 1984; Ştefan 2002; <u>*O**. *portulacoides* Moq.</u> – Brandza 1879-1883; Prodan 1922; Sch. Cent. II 1922; Prodan 1939; Isăcescu 1939; <u>*H*. portulacoides* (L.)</u> Aellen – Doltu 1983			sun exposure; we newer found it in humid soil' conditions (Grigore pers. obs.). A species with strong, deep – penetreting roots, with salt hairs located on leaf' petiole and lamina (Grigore and Toma 2010b; 2010d).		
***Krascheninnikovia ceratoides* L. Gueldenst.** (Fig. 20)	Ciocârlan 2000; *Eurotia ceratoides* (L.) C. A. Mey. – Grecescu 1898; Prodan 1939; Flora I; *Eurotium ceratoides* C. A. Mey. – Brandza 1898	PH	I categ. (Prodan 1939)	Dry, less salinized habitats (Ciocârlan 1988, 1990)		
Ceratocarpus	Bucur 1957a;	TH			1. 120, , 130	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	Others
***arenarius* L.**	Şerbănescu 1965	Ann.			2. 1200, ,2470	
***Camphorosma annua* Pall.** (Fig. 21)	Răvăruț 1941; Țopa 1954; Bucur 1957a, b; Samoilă 1957; Pop 1959; Borza 1964; Andrei 1965; Mititelu 1965; Şerbănescu 1965; Borza 1966; Dobrescu 1969; Mihai 1969; Mititelu 1969; Turenschi 1970; Mititelu 1971a; Mihai 1972; Ivan 1978; Sanda 1978; Dihoru 1969; Doltu 1979; Mititelu 1978-1980; Popescu 1981; Doltu 1983; Doltu 1984; Popescu 1984; Sanda 1984; Mititelu 1987; Sanda 1990b; Sanda	TH Ann	I categ. (Prodan 1939); Obligatory Halophyte (Țopa 1954, Andrei 1965); Euhalophyte (Bucur 1960a)	Salinized soils, often flooded in the springs, riversides (Ciocârlan 1988, 1990); Requires a significant ammount of water during its development; this water is provided by soil' upper layer. First, it germinates only in elevated places but after spring' water is being drained, it also germinates in lower places (Prodan, 1922); Mesophilous to xerophilous,	1. 65, 360, 1045 2.110,1750,3310	C_4 species (Grigore and Toma 2010b)

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1991; Coste 1993; Ciocârlan 1994; Burac 1997; Ciocârlan 2000; Pop 2000; Sârbu 2001; *C. ovata* Waldst. et. Kit – Brandza 1879-1883; Pax 1919; Prodan 1922; Sch. Cent. II 1922; Prodan 1923; Sch. Cent. XVII-XVIII 1938; Papp 1939; Prodan 1939; Flora I; Prodan 1956; Dobrescu 1957; Popescu 1957; Popescu 1957 b; Căzăceanu 1959; Bucur 1960; Bucur 1960b; Bujorean 1961; Crişan 1962; Guşuleac 1962; Popescu 1963; Teşu			mesothermophile to megathermophilic, strongly heliophilous, strongly alkaliphilous and euhalophilous. It develops on salinized water meadows or slopes. Indicates a soil that is dried in its surface during the summer (Bucur 1960a). We think that it is rather a xerophilous halophyte, vegetating as isolated individuals or in small patches		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1964; Turenschi 1964; Bucur 1966; Popescu-Domogled 1966; Mititelu 1967; Răvăruț 1968; Ciocârlan 1972; Pătraşcu 1973; Mititelu 1975; Mititelu1975b; *C. annua* f. *faxiflora* (Beck), f. *densiflora* (Beck), f. *nana* (Beck) – Țopa 1939; *C. annua* Pall. f. *densiflora* (Beck) E. Țopa nova comb. - Sch. Cent. XXII-XXIII			(Grigore pers. obs.); A species with water storage tissues in the lamina' structure (Grigore and Toma 2010b)		
C. monspeliaca L. (Fig. 22)	Săvulescu 1925; Prodan 1939; Şerbănescu 1965; Borza 1966; Ghişa 1969; Mititelu 1971a; Doltu 1979;	Ch Per.	I categ. (Prodan 1939)	Alluvial, sandy soils, temporarily flooded, sometimes salinized (Ciocârlan 1988,		C_4 species (Grigore and Toma 2010b)

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Doltu 1983; Doltu 1984; Popescu 1984; Mititelu 1987; Sanda 1990b; Ciocârlan 2000; Pop 2000; Sârbu 2001; *C. monspeliaca* v. *pilosa* – Țopa 1939			1990)		
***Bassia prostrata* (L.) G. Beck (Fig. 23)**	*Kochia prostrata* (L.) Schrad – Fuss 1866; Brandza 1879-1883; Isăcescu 1939; Răvăruț 1941; Prodan 1956; Bucur 1957b; Pop 1959; 1960 Bucur 1960b ; Mititelu 1965; Mititelu 1967; Mititelu 1969; Cîrțu 1977; Vițalariu 1972; Sanda 1990b; Pop 2000; Sârbu 2000;	Ch Per.		Strictly xerophilous, mesothermophile – megathermophilic, heliophilous, less sciophilous, weakly to strongly euhalophilous; usually, it develops on dry, weakly to strongly salinized soils (Bucur 1960a)	1. 40, 190, 1410 2. 350, 720,2740	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Sârbu 2001; Ştefan 2002; *K. prostrata* (L.) Schrad. f. *canescens* Moq. – Oescu 1957					
B. laniflora (S. G. Gmel.) A. J. Scott	*Kochia laniflora* (Gmel.) Borbás – Sanda 1978; *K. arenaria* (P. Gaertn., B. Mey. & Scherb.) Roth. – Fuss 1866	TH Ann.	Xerophilous, Psammophyte (Ciocârlan 1988, 1990)	Sandy soils, dunes (Ciocârlan 1988, 1990)		
B. hirsuta (L.) Asch. (Fig. 24)	Pax 1919; Prodan 1939; Răvăruț 1941; Flora I; Şerbănescu 1965; Ivan 1978; Doltu 1979; Popescu 1981; Doltu 1983; Doltu 1984; Popescu 1984; Sanda 1984; Mititelu 1987; Sanda 1990b; Sanda 1991; Ciocârlan	TH Ann.	I categ. (Prodan 1939); Obligatory Halophyte (Țopa 1954)	Salinized areas, arround salt lakes, sea shore (Ciocârlan 1988, 1990)		C_3 species (Grigore and Toma 2010b)

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	Others
	1994; Sârbu 1995a; Sârbu 1995b; Ştefan 1995a; Ciocârlan 2000; Pop 2000; Sârbu 2001; *B. h. monspeliaca* var. *pilosa* – Țopa 1954; *Kochia hirsuta* Nolte - Brandza 1879-1883; Prodan 1922; Isăcescu 1939; Papp 1939; Doltu 1979					
B. sedoides (Pall.) Asch. (Fig. 25)	Prodan 1939; Flora I; Bucur 1957a, b; Bucur 1960b; Andrei 1965; Şerbănescu 1965; Bucur 1966; Popescu 1976; Ivan 1978; Doltu 1979; Doltu 1984; Sanda 1984; Mititelu 1971a; Sanda 1979;	TH Ann.	I categ. (Prodan 1939); Euhalophyte (Bucur 1960a)	Salinized soils (Ciocârlan 1988, 1990); Xerophilous, mesothermophile, heliophilous or less sciophilous, alkaliphilous, weakly to strongly euhalophilous;	1. 65, 130, 480 2. 50, 200, 840	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Popescu 1984; Mititelu 1987; Sanda 1990b; Sanda 1991; Ciocârlan 1994; Sârbu 1995a; Ciocârlan 2000; Pop 2000; Sârbu 2001			Indicates weakly or moderately salinized soils, fallowed or almost fallowed, sometimes ruderalized (Bucur 1960a)		
?B. hyssopifolia	Prodan 1939		I categ. (Prodan 1939)			
B. scoparia (L.) A.J.Scott	Oprea 1997					
***Halocnemum strobilaceum* (Pall.) M. Bieb.** (Fig. 26)	Săvulescu 1925; Sch. Cent. XVII-XVIII 1938; Prodan 1939; Flora I; Țopa 1954; Doltu 1979; Doltu 1983; Sârbu 1995a; Sârbu 1995b; Ciocârlan 2000; Pop 2000; Sârbu 2001; Ştefan 2001a	Ch Per.	I categ. (Prodan 1939); Obligatory Halophyte (Țopa 1954)	Sea shores (Ciocârlan 1988, 1990)		
***Arthrocnemum glaucum* (Delile)**	Pax 1919; Prodan 1922					In Romania, the presence of this

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
Ung. – Sternb.						species is still obscure and disputed. As far as we know, it was mentioned only by Prodan (1922, 1939), within „modern" halophytes' ecologists. Anyway, no species of *Arthrocnemum* was included by Ciocârlan (2009); Oprea (2005) mentioned this species as synonym of *A. macrostachyum* (Moric.) K. Koch. Anyway, in the

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
						ecological description of this species made by Prodan (1922), it is clearly specified that is a perennial species with lignified branches, and inflorescence divided by „scars”. This is a subtle but important observation. I observed in Spain – dealing with succulent articulated chenopods - that these „scars” are of great

Species	**Authors with cited species/Synonyms**	**Life form**	**Halophyte type/ecological type**	**Habitat / Ecological spectrum**	**Salinity tolerance** **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	**Others**
						importance for taxonomical purposes. In addition, in a reprint from 1923 of his work from 1922, Prodan gave a drawing of this species. This picture is original and most likely, is derived from personal observations. Perhaps is the single picture of this species made by a Romanian botanist. In this context, is strange that these strongly

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
						reliable data were not used and confirmed during time by further botanists. Anyway, in Romania researches regarding the presence, distribution and ecology of these species must be carefully checked in the future.
Salicornia procumbens **Sm.**	Ştefan 1995b; Ciocârlan 2000	TH Ann.	Mesohygrohalophyte (Ciocârlan 2009)	A rare species vegetating in lower, wet riversides of Delta Dunarii (Ciocârlan 2009)		In Romania, it is represented by var. *stricta* (G. Mey.) J. Duvign. et Lambinon Ciocârlan

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	Others
						(2009)
S. ramosissima Woods (Fig. 27)	Ciocârlan 1994; Ciocârlan 2000	TH Ann.	Mesohalophyte (Ciocârlan 2000)			
S. europaea L. (Fig. 28)	Todor 1947 (and) f. *stricta* (Willd.) F. G. W. Mey; Ciocârlan 1972; Popescu 1973; Sanda 1973; Popescu 1975; Popescu 1976; Mititelu 1978-1980; Doltu 1979; Pop 1980; Popescu 1981; Pop 1983; Popescu 1984; Sanda 1984; Mititelu 1987; Popescu 1987; Mititelu 1988; Pop 1988; Sanda 1990a; Sanda 1990b; Sanda 1991; Sanda 1992; Ciocârlan	TH Ann.	I categ. (Prodan 1939); Obligatory Halophyte (Țopa 1954, Andrei 1965); Euhalophyte (Bucur 1960a); Mesohalophyte – Hygrohalophyte (Ciocârlan 1988, 1990)	Wet salinized habitats (Ciocârlan 1988, 1990); A species closely related to water and humidity; its mechanical tissues are very rudimentary and its erect position is mainly assured by cellular turgescence. When the water uptake ceases, the plant dies (Prodan, 1922); Strictly hygrophilous, mesothermophile	1. 545, 960,1595 2. 390,740,890	C_3 species (Grigore and Toma, 2010b)

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1994; Sârbu 1995a; Sârbu 1995b; Ştefan 1995a; Ciocârlan 2000; Sârbu 2000; Sârbu 2001; Ştefan 2002; *S. herbacea* (L.) L. – Edel 1835; Guebhard 1848; Fuss 1866; Brandza 1879-1883; Schur 1885; Grecescu 1898; Prodan 1922; Sch. Cent. IV et V 1924; Prodan1937; Sch. Cent. XVII-XVIII 1938; Isăcescu 1939; Prodan 1939; Țopa 1939; Răvăruț 1941; Csuros 1947; Flora I; Țopa 1954; Bucur 1960; Buia 1959; Csuros 1961; Andrei 1962; Ciurchea 1962b;			, heliophilous, less sciophilous, strongly alkaliphilous, moderately to strongly halophyte. It develops on salinized wet meadow soils (Bucur 1960a). This is a hygro-halophyte, vegetating only in wet, sometimes flooded salinized areas. It is a succulent halophyte, presenting water storage tissues and tracheoidioblasts in its fleshy		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Guşuleac 1962; Borza 1964; Pall 1964; Teşu 1964; Andrei 1965; Csuros-Kaptalan 1965; Mititelu 1965; Şerbănescu 1965; Bucur 1966; Sanda 1967; Răvăruț 1968; Turenschi 1970; Mititelu 1971a; Mihai 1972; Rusu 1972; Cristurean 1973; Cîrțu 1977; Samú 1982); var. *prostrata* (Pall. Rchb.); *S. prostrata* Pall. – Mititelu 1972; Mititelu 1975b; Pop 2000); *S. patula* – Sârbu 1995b; Pop 2000			tissues (Grigore and Toma 2010b).		
***Petrosimonia triandra* (Pall.)**	Pax 1919; Sch. Cent I 1921; Sch. Cent.	TH Ann.	I categ. (Prodan 1939); Obligatory	Salty soils (Ciocârlan 1988,	1. 45, 170, 920 2. 170, 920,3220	C_4 species (Grigore,

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
Simonk. (Fig. 29)	XVII-XVIII 1938; Isăcescu 1939; Prodan 1939; Țopa 1939; Răvăruț 1941; Sch. Cent. XXIV-XXV 1943; Flora I; Todor 1947; Țopa 1954; Bucur 1957a, b; Dobrescu 1957; Pop 1959; Bucur 1960; Bucur 1960b; Csuros 1961; Andrei 1965; Mititelu 1965; Șerbănescu 1965; Bucur 1966; Răvăruț 1968; Dihoru 1969; Mihai 1969; Csuros 1970; Turenschi 1970; Mititelu 1971a; Mihai 1972; Sanda 1978; Doltu 1979; Pop 1980; Doltu		Halophyte (Țopa 1954, Andrei 1965); Euhalophyte (Bucur 1960a)	1990); Its brances are transported by the wind, thus assuring the plant dispersal, even in less salinized places (Prodan, 1922); Xerophilous, strictly heliophilous, mesothermophile to megathermophilic, strongly alkaliphilous and euhalophilous, developing only on dry salinized areas; indicates dried salinized areas in their superficial layer (Bucur 1960a).		2008b; Grigore and Toma 2010b)

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1983; Doltu 1984; Popescu 1984; Mititelu 1987; Pop 1988; Sanda 1990a; Sanda 1990b; Sanda 1991; Ciocârlan 2000; Pop 2000; Sârbu 2001; *P. triandra* (Pall.) Simonk. f. *laxiflora* Fenzl. – Oescu 1957; *Halimocnemis triandra* Moq. Tend. – Grecescu 1898; Prodan 1922; *Halimocnemis volvox* C.A.M. – Fuss 1866; Brandza 1898; *H. volvix* C. A. Mey. – Schur 1885			This is a xero-halophyte, found by us only on dry, full sun areas, as isolated individuals (Grigore pers. obs.). It presents succulence, due to the water storage tissue located in the lamina (Grigore and Toma 2010 b)		
P. oppositifolia (Pall.) Litv.	Doltu 1983; Doltu 1984; Sanda 1990b; Ciocârlan 2000;	TH Ann.	I categ. (Prodan 1939); Obligatory Halophyte (Țopa	Salty soils (Ciocârlan 1988, 1990); More		C_4 species (Grigore and Toma 2010b)

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Pop 2000; Sârbu 2001; *P. crassifolia* auct. - Prodan 1939; Răvăruț 1941; Flora I; Țopa 1954; Şerbănescu 1965; *Halimocnemis crassifolia* C.A. Mey – Brandza 1898; Grecescu 1898; Prodan 1922		1954)	succulent that *P. triandra*, preferring more wet salinized areas; found near to the sea but also in salt steppes (Prodan, 1922); This species is also succulent, less frequent that *P. triandra,* occuring in dry saline soils (Grigore, pers. obs.)		
? *P. brachiata*	Prodan 1939		I categ. (Prodan 1939)			
? *P. glauca*	Pax 1919					
?*Suaeda altissima* (L.) Pall.	Ciocârlan 2000	TH Ann.	Mesohalophyte (Ciocârlan, 2009)			Cited from Ukraine and NE of Bulgaria, it is expected to be found also in

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
						Romania (Ciocârlan, 2009)
S. splendens (Pourr.) Gren. Et Godr.	Brandza 1898; Prodan 1939; Flora I; Țopa 1954; Doltu 1983; Ciocârlan 1994; Ștefan 1995b; Ciocârlan 2000; Sârbu 2001; *S. setigera* (DC.) Moq. – Pax 1919	TH Ann.	I categ. (Prodan 1939); Obligatory Halophyte (Țopa 1954)	Salt areas (Ciocârlan 1988, 1990)		
S. maritima (L.) Dumort. (Fig. 30)	Hacquet 1790-96; Guebhard 1848; Grecescu 1898; Prodan 1922; Sch. Cent I 1921; Isăcescu 1939; Papp 1939; Prodan 1939; Țopa 1939; Răvăruț 1941; Csuros 1947; Flora I; Țopa 1954; Bucur 1960a; Dobrescu 1957; Căzăceanu 1959;	TH Ann.	I categ. (Prodan 1939); Obligatory Halophyte (Țopa 1954, Andrei 1965); Euhalophyte (Bucur 1960a); Mesohyrohalophyte (Ciocârlan 2000); Mesohalophyte – Hygrohalophyte (Ciocârlan 1988, 1990)	Salty, sandy soils (Ciocârlan 1988, 1990); Annual species, hygrophilous, heliophilous, strongly alkaliphilous, moderately to strongly euhalophilous. It develops on humid, water	1. 130, 570,1065 2. 760,165,1780	C_3 species (Grigore and Toma 2010b)

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Andrei 1962; Ciurchea 1962b; Guşuleac 1962; Borza 1964; Andrei 1965; Csuros-Kaptalan 1965; Şerbănescu 1965; Bucur 1966; Mititelu 1967; Sanda 1967; Răvăruț 1968; Dihoru 1969; Mihai 1969; Mititelu 1969; Turenschi 1970; Mititelu 1971a; Ciocârlan 1972; Mihai 1972; Mititelu 1972; Pătraşcu 1973; Popescu 1973; Sanda 1973; Mititelu 1975; Popescu 1975; Mititelu 1975b; Popescu 1976; Cîrțu			meadows soils, strongly salinized. This species indicates a salinized wet meadow soil, sometimes even flooded (Bucur 1960a). This is a species with shallow root, succulent shoot, due to the water storage tissues (Grigore and Toma 2010b), strictly halophyte, occurring only in salinized soils where the water is always present. It associate frequently with		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1977; Ivan 1978; Sanda 1978; Doltu 1979; Mititelu 1978-1980; Pop 1980; Popescu 1981; Doltu 1983; Pop 1983; Popescu 1984; Sanda 1984; Antohe 1986; Mititelu 1987; Popescu 1987; Pop 1988; Sanda 1990a; Sanda 1990b; Sanda 1991; Sanda 1992; Ciocârlan 1994; Sârbu 1995a; Sârbu 1995b; Ştefan 1995a; Ştefan 1995b; Ciocârlan 2000; Pop 2000; Sârbu 2000; Sârbu 2001; Ştefan 2001b; Şt efan 2002; *Schoberia maritima*			*Salicornia europaea* (Grigore pers. obs.)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	C.A.M. – Fuss 1866; Brandza 1879-1883; Schur 1885; *S. maritima* (L.) Dumort. ssp. *salinaria*, ssp. *salsa* - Prodan 1939; *S. maritima* (L.) Dumort var. *salsa* – Csuros 1947; *S. maritima* (L.) Dumort ssp. *filiformis* G. - Țopa 1939; *S. prostrata* Pall. – Edel 1835					
S. maritima ssp. *pannonica* (Beck) Soó ex P.W. Ball (Fig. 31)	*S. pannonica* Beck. – Săvulescu 1925; Prodan 1939; Țopa 1954; Flora I	TH. Ann.	I categ. (Prodan 1939); Obligatory Halophyte (Țopa 1954)			
S. salsa (L.) Pall.	Grecescu 1898; Pax 1919; Ciocârlan 1994; Ciocârlan 2000; *Schoberia salsa* C.A.M. – Fuss	TH Ann.				

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1866; Schur 1885					
S. confusa Iljin	Ciocârlan 1994; Ciocârlan 2000; Sârbu 2001		Mesohyrohalophyte (Ciocârlan 2000)			
? *S. lanata*	Edel 1835					
Salsola kali **L.**	Edel 1835; Fuss 1866; Brandza 1879-1883; Schur 1885; Brandza 1898; Pax 1919; Prodan 1922; Guşuleac 1933; Prodan 1939; Țopa 1939; Răvăruț 1941; Borza 1964; Ciocârlan 2000; Sârbu 2001; *S. kali* L. α *hirsuta* Hornem *tenuiflora* Tausch; *S. kali* L. β *pseudotragus* Beck – Țopa 1939; *S. kali* L. A. *crassifolia* Fenzl l. C. – Grecescu 1898)	TH Ann.	III categ. (Prodan 1939); Preferential Halophyte (Țopa 1954); Neohalophyte (Bucur 1961)	Sandy, sometimes saline soils (Ciocârlan 1988, 1990)	1. 60, 120, 530 2. 45, , 2170	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	ssp. *ruthenica* (Iljin) Soó - Pop 2000; Sârbu 2003; *S. ruthenica* Iljin - Flora I; Țopa 1954; Bucur 1961; Mititelu 1965; Șerbănescu 1965; Pop 1969b; Sanda 1991; *S. australis* R. Br. – Ciocârlan 1994 ssp. *tragus* (L.) Nyman - Ciocârlan 1994; Pop 2000; *S. tragus* L. – Schur 1885					
S. soda L. (Fig. 32)	Schur 1885; Prodan 1922; Sch. Cent. XVII-XVIII 1938; Prodan 1939; Isăcescu 1939; Țopa 1939; Răvăruț 1941; Flora I; Țopa 1954; Bucur 1960a;	TH Ann.	I categ. (Prodan 1939); Obligatory Halophyte (Țopa 1954); Euhalophyte (Bucur 1960a); Mesohalophyte – Hygrohalophyte (Ciocârlan 1988,	Sandy, saline continental and coastal areas (Ciocârlan 1988, 1990);	1. 630, 830,2420 2. 1020, 1480, 2020	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Popescu 1963; Teşu 1964; Mititelu 1965; Şerbănescu 1965; Răvăruț 1968; Mititelu 1971a; Popescu 1975; Popescu 1976; Doltu 1979; Doltu 1983; Doltu 1984; Popescu 1984; Sanda 1984; Mititelu 1987; Sanda 1990b; Sanda 1991; Ciocârlan 1994; Ciocârlan 2000; Sârbu 2001; Pop 2000; Ştefan 2002		1990)			
			Polygonaceae			
***Polygonum aviculare* L.** (Fig. 33)	Prodan 1922; Prodan 1923; Prodan 1939; Isăcescu 1939; Csuros 1947; Flora I; Țopa 1954;	TH Ann.	III categ. (Prodan 1939); Supporting Halophyte (Țopa 1954); Neohalophyte (Bucur 1961)	Ruderal places, sometimes salt areas (Ciocârlan 1988, 1990)	1. 35, 80, 515 2. 55, 100,2430 1. 75, 390, 960 2. 95, 670,1510	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Prodan 1956; Bucur 1957a, b; Popescu 1957; Samoilă 1957; Buia 1959; Pop 1959; Bucur 1961; Bujorean 1961; Andrei 1962; Crişan 1962; Popescu 1963; Pall 1964; Turenschi 1964 ; Mititelu 1965; Şerbănescu 1965; Bucur 1966; Bucur 1967; Csuros 1968; Răvăruț 1968; Mihai 1969; Pop 1969a; Turenschi 1970; Mititelu 1971a; Mihai 1972; Rusu 1972; Dobrescu 1973; Pătraşcu 1973; Popescu 1976; Mihai 1977; Ivan 1978; Sanda					

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1978; Doltu 1979; Samú 1982; Pop 1983; Popescu 1984; Sanda 1984; Sanda 1991; Coste 1993; Pop 2000; Sârbu 2001; Ştefan 2002; *P. aviculare* L. var. *littorale* Mert. et Koch; var. *erectum* (Roth) Hayne Arzneigew; var. *condensatum* Becker – Flora I; *P. aviculare* L. var. *erectum* (Roth.) Hayne - Todor 1947; Bucur 1957a; *P. aviculare* var. *latifolium* – Andrei 1965; *P. aviculare* – *condensatum* – Cîrțu 1977; *P. virgatum* Schur – Fuss 1866; Schur					

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1885					
P. maritimum L. (Fig. 34)	Flora I; Popescu 1976; Pop 1977; Ciocârlan 1994; Ciocârlan 2000; Sârbu 2001	H Per.		Coastal salty sands (Ciocârlan 1988, 1990)		
P. patulum M. Bieb. (Fig. 35)	Sch. Cent. XIX-XXI 1949; Răvăruț 1941; Bucur 1957a; Flora I; Pop 1980; Mititelu 1987; Ciocârlan 2000; Pop 2000; Sârbu 2001; *P. bellardi* All. – Brandza 1898; Prodan 1922; Prodan 1939; ssp. *patulum;* ssp. *kitaibelianum* (Sadl.) Asch. et. Graebner – Prodan 1939; Ciocârlan 1994; *P. kitaibelianum* Sadler – Şerbănescu	TH Ann.	II categ. (Prodan 1939)	Sands, sometimes salinized alluvial soils (Ciocârlan 1988, 1990)	1. 55, 66, 90 2. 55, 60, 90	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1965					
P. neglectum Besser	Ciocârlan 2000, 2009					
P. amphibium L. f. *terrestre* Leyss.	Popescu 1963; *P. amphibium* – Popescu 1976; Ştefan 2001b; *P. amphibium* L. var. *terrestre* - Samoilă 1957	h-h Per.				
P. hydropiper L.	Bucur 1957a; Popescu 1976; Sanda 1991; Ştefan 2001b; Ştefan 2006	TH Ann.		Wet ruderal flooded places, marshes (Ciocârlan 1988, 1990)	1. ,130, 2. , 180,	
P. persicaria L	Bucur 1961; Csuros-Kaptalan 1965	TH Ann.	Neohalophyte (Bucur 1961); Mesohygrophilous (Ciocârlan 1988, 1990)		1. 70, 75, 570 2. 70, 100, 665	
P. lapathifolium L.	Todor 1947 (and var. *tomentosum* (Schhrnk.) Beck et Lerch); Prodan 1956; Şerbănescu 1965	TH Ann.	Eutrophic, nitrophilic, Mesophilous – Mesohygrophilous (Ciocârlan 1988, 1990)	Ruderal and cultivated areas, more or less wet, temporarily flooded areas (Ciocârlan 1988,		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
				1990)		
P. mesembricum Chrtek	P. *rayi* auct. – Ciocârlan 1994	TH-Ht, Ann., Bisann.		Sandy soils on Black Sea shores (Ciocârlan 1988, 1990)		
P. arenarium Waldst. et Kit.	Sanda 1978	TH Ann.		Sands, meadows (Ciocârlan 1988, 1990)		
P. rurivagum Jord. ex Boreau	Popescu 1987	TH Ann.				
***Fallopia convolvulus* (L.) Á Löve**	*P. convolvulus* L. – Bucur 1957a	TH Ann.			1. 15, 60, 145 2. 15, 60, 460	
***Rumex stenophyllus* Ledeb. (Fig. 36)**	Prodan 1939; Răvăruț 1941; Flora I; Prodan 1956; Bucur 1957a; Popescu 1957; Pop 1959; Popescu 1963; Popescu – Domogled 1966; Mititelu 1971a; Mititelu 1971b; Mititelu 1975b; Sanda 1977; Samú	H Per.	I categ. (Prodan 1939); Mesohalophyte – Hygrohalophyte (Ciocârlan 1988, 1990)	Meadows, ruderal more or less salinized places (Ciocârlan 1988, 1990)	1. 30, 100, 1380 2. 45, 120, 1940	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1982; Pop 1983; Sanda 1991; Ciocârlan 2000; Pop 2000; *R. odontocarpus* Sándor – Prodan 1922					
R. maritimus L. (Fig. 37)	Fuss 1866 ; Schur 1885; Prodan 1922; Prodan 1939 ; Țopa 1954; Flora I; Popescu 1973; Popescu 1975; Popescu 1976; Popescu 1984; Sanda 1990b; Sanda 1992; Ciocârlan 1994; Sârbu 1995a; Ştefan 1995b; Ciocârlan 2000; Pop 2000; Sârbu 2001	TH Ann.	II categ. (Prodan 1939); Supporting Halophyte (Țopa 1954); Hygrohalophyte (Ciocârlan 1988, 1990)	Bordering the waters, lakes; marshes, sea shore, on soils often salinized (Ciocârlan 1988, 1990); Sandy, wet salinized areas and sea shores (Prodan, 1922)		
R. crispus L.	Prodan 1939; *R. crispus* L. – Guşuleac 1933;	H Per.	III categ. (Prodan 1939); Neohalophyte			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Prodan 1956; Pop 1959; Bucur 1961; Şerbănescu 1965; Bucur 1967; Răvăruț 1968; Mihai 1969; Pop 1969a; Turenschi 1970; Mihai 1972; Dobrescu 1973; Mihai 1977; Mititelu 1978-1980; Pop 1980; Sanda 1984; Pop 2000; Ştefan 2001b; Şefan 2002		(Bucur 1961) Eutrophic, Mesophilous – Mesohygrophilous (Ciocârlan 1988, 1990)			
R. hydrolapathum Huds.	Prodan 1922; Prodan 1939; Țopa 1954 ; Sârbu 2000; Ştefan 2006	HD Per.	III categ. (Prodan 1939); Accidental Halophyte (Țopa 1954)	Marshes (Ciocârlan 1988, 1990); Riversides, near to slow or stagnant waters (Prodan, 1922)		
R. palustris Sm.	Bucur 1957a; Sârbu 1995a; *R. paluster* – Popescu 1963; *R.*	TH Ann.	II categ. (Prodan 1939); Hygrophilous	Meadows, watersides, marshes	1. 104, 110, 114 2. 82, 93, 95	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	limosus Thuill. – Prodan 1922; Prodan 1939		(Ciocârlan 1988, 1990)	(Ciocârlan 1988, 1990)		
R. confertus Willd.	Guşuleac 1933	H Per.	Mesohygrophilous – Hygrophilous (Ciocârlan 1988, 1990)			
R. acetosella L.	Guşuleac 1933; *R. acetosa* L. – Rusu 1972	H Per.	Oligotrophic, Mesoxerophilous, calciphobous (Ciocârlan 1988, 1990)			
Plumbaginaceae						
***Armeria maritima* (Mill.) Willd.**	Sanda 1973; Doltu 1979; Ciocârlan 2000; Sârbu 2001	H Per.		Salt areas, rare species (Ciocârlan 1988, 1990)		
***Limonium bellidifolium* (Gouan) Dumort.** (Fig. 38)	Sanda 1990b; Ciocârlan 1994; Sârbu 1995a; Ciocârlan 2000; Pop 2000; Sârbu	H Per.	I categ. (Prodan 1939); Obligatory Halophyte (Țopa 1954)	Sandy wet and salinized soils (Ciocârlan 1988, 1990)		In Romania, occurs as ssp. *danubiale* (Klokov) Roman

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	2000; Sârbu 2001; Ştefan 2001a; Ştefan 2002; *Statice caspia* Willd. – Prodan 1922; Prodan 1937; Prodan 1939; Flora VII; Popescu 1975; Popescu 1981; Doltu 1983; *L. bellidifolium* var. *danubiale* – Pop 2000; *Limonium caspium* (Willd.) Gams – Țopa 1954					(Ciocârlan, 2009)
L. tomentellum (Boiss.) Kuntze	Ciocârlan 2000			Very rare, in wet salinized meadows (Ciocarlan, 2009)		
L. gmelinii (Willd.) O. Kuntze (Fig. 39)	Țopa 1954; Bucur 1957a, b; Dobrescu 1957; Popescu 1957; Căzăceanu 1959; Bucur 1960b; Crişan 1962;	H Per.	I categ. (Prodan 1939); Obligatory Halophyte (Țopa 1954, Andrei 1965); Euhalophyte (Bucur 1960a);	Salinized meadows (Ciocârlan 1988, 1990); perennial plant, very common in salty	1. 45, 150, 1065 2. 120, 1450,260	This species has a strong rhizome, coriaceous leaves with typical salt

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Mititelu 1978-1980; Pop 1983; Antohe 1986; Mititelu 1987; Mititelu 1988; Sanda 1990a; Sanda 1991; Sanda 1992; Coste 1993; Ciocârlan 1994; Sârbu 1995a; Ştefan 1995a; Burac 1997; Ciocârlan 2000; Pop 2000; Sârbu 2001; Şt 2002; *Statice gmelinii* Willd. – Guebhard 1848; Fuss 1866; Brandza 1879-1883; Schur 1885; Grecescu 1898; Pax 1919; Prodan 1922; Prodan 1923; Sch. Cent. II 1922; Prodan 1937; Papp 1939; Prodan 1939; Isăcescu 1939;		Mesohygrophilous, halophyte (Ciocârlan 1988, 1990)	areas, mesohygrophilous (its tap root develops deeply in the soil thus exploiting the salinized water table); mesothermophile, from less to strongly alkaliphilous. It can develop on salinized water meadows, as well on dry slopes (Bucur, 1960a)		glands (Grigore and Toma, 2010b, c)

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Răvăruț 1941; Sch. Cent. XXII-XXIII; Țopa 1939; Csuros 1947; Todor 1948; Prodan 1956; Samoilă 1957; Flora VII; Samoilă 1957; Moşneagă 1958; Pop 1959; Bucur 1960; Bujorean 1961; Guşuleac 1962; Popescu 1963; Pall 1964; Teşu 1964; Turenschi 1964; Andrei 1965; Csuros-Kaptalan 1965; Mititelu 1965; Şerbănescu 1965; Bucur 1966; Popescu-Domogled 1966; Bucur 1967; Mititelu 1967; Sanda 1967; Răvăruț 1968;					

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Dihoru 1969; Dobrescu 1969; Mihai 1969; Mititelu 1969; Țopa 1969; Csuros 1970; Turenschi 1970; Mititelu 1971a; Ciocârlan 1972; Mihai 1972; Mititelu 1972; Dobrescu 1973; Popescu 1973; Sanda 1973; Mititelu1975b; Popescu 1975; Ivan 1978; Doltu 1979; Pop 1980; Samú 1982; Sanda 1990a; Sanda 1990b; Doltu 1983; Popescu 1984; Sanda 1984; Pop 1988					
L. meyeri (Boiss.) O.	Sanda 1992; Ciocârlan 1994;					

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
Kuntze	Ciocârlan 2000; Sârbu 2001; Ştefan 2001a; Ştefan 2002					
L. vulgare Mill. (Fig. 40)	*Statice limonium* L. - Edel 1835; Fuss 1866; Răvăruț 1941; Flora VII; Borza 1966; Doltu 1979; Doltu 1983; Popescu 1984; *Limonium vulgare* Mill. –Sârbu 1995a	H Per.		Meadows, sandy, wet and salinized soils (Ciocârlan 1988, 1990)		Erroneously mentioned from Delta Dunarii by some confusions with other species; then it was adopted by many botanical papers. Actually, it do not grows in Romania; there is a lack of herbarium material from Romania (Ciocârlan, 2009)
L. latifolium (Sm.) O. Kuntze (Fig. 41)	Răvăruț 1948; *Statice latifolia* Sm – Pax 1919; Bucur	H Per.	Neohalophyte (Bucur 1961)	Dry meadows (Ciocârlan 1988, 1990)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1961					
***Goniolimon tataricum* (L.) Boiss** (Fig. 42)	Pax 1919; Ciocârlan 2000, 2009; Sârbu 2001; *Statice tatarica* L. – Schur 1885	Per.		Dry meadows, sometimes salinized (Ciocârlan 1988, 1990)		
Goniolimon besseranum (Schult. ex Rchb.) Kusn. (Fig. 43)	Pax 1919; *Statice besseriana* – Şerbănescu 1965	H Per.		Dry meadows (Ciocârlan 1988, 1990)		
			Crassulaceae			
***Sedum caespitosum* (Cav.) DC.**	Prodan 1922; Prodan 1939; Pop 1959; Bujorean 1961; Popescu 1963; Pop 2000; *Crassula caespitosa* – Țopa 1954; Prodan 1956	TH Ann.	I categ. (Prodan 1939); Supporting Halophyte (Țopa 1954)	Meadows, sandy, stony soils (Ciocârlan 1988, 1990)		
S. telephium L. s.str.	*S. purpureum* Schult. var. *occidentale* – Prodan 1939; Țopa 1939; Țopa 1954;	H Per.	II categ. (Prodan 1939); Supporting Halophyte (Țopa 1954); Euhalophyte (Bucur 1960a)	Stony soils (Ciocârlan 1988, 1990); Perennial, xerophilous to		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Sedum purpureum Schult. – Țopa 1939; Bucur 1960; Bucur 1960b			mesophilous, megathermophilic, heliophilous, weakly alkaliphilous, weakly to moderately euhalophilous. It develops on weakly salinized areas, indicating salty soil which becomes dried in their surface (Bucur 1960a)		
			Rosaceae			
***Fragaria viridis* (Duchesne) Weston**	Bucur 1957a; Pop 2000; f. *collina* Ehrh. – Prodan 1956; Şerbănescu 1965	H Per.	Mesotrophic, Mesoxerophilous, Mesothermophilic (Ciocârlan 1988, 1990)		1. 50, 70, 110 2. 60, 90, 115	
***Potentilla argentea* L.**	Prodan 1922; Prodan 1939; Csuros 1947; Țopa 1954; Bucur 1957a;	H Per.	III categ. (Prodan 1939); Accidental Halophyte (Țopa 1954, Andrei 1965);		1. 20, 30-70, 210 2. 20, 70-100, 1300	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Pop 1959; Samoilă 1960; Andrei 1965; Şerbănescu 1965; Mititelu 1969; Sanda 1978; Pop 1983; Sanda 1984; Sanda 1991; Coste 1993; Pop 2000; *P. argentea* L. var. *latisecta* (Saut.) Th. W. – Bucur 1957a, b		Xeromesophilous, moderately to less acidophile (Ciocârlan 1988, 1990)			
P. leucopolitana P. J. Müll	Csuros 1947	H Per.				
P. anserina L.	Prodan 1939; Țopa 1954; Popescu 1963; Csuros-Kaptalan 1965; Pop 1969a; Rusu 1972; Sanda 1973	H Per.	III categ. (Prodan 1939); Mesohygrophilous – hygrophilous, Eutrophic (Ciocârlan 1988, 1990)	Wet meadows, often ruderalised, watersides (Ciocârlan 1988, 1990)	1. 30, 40, 110 2. 80, 90, 640	
P. reptans L.	Prodan 1923; Prodan 1939; Țopa 1954; Samoilă 1957; Prodan 1956;	H Per.	III categ. (Prodan 1939); Accidental Halophyte (Țopa 1954, Andrei 1965);	Wet meadows, often flooded and ruderalized (Ciocârlan 1988,	1. 40, 80, 290 2. 50, 85, 530	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Bucur 1961; Pop 1959; Samoilă 1960; Andrei 1965; Şerbănescu 1965; Bucur 1966; Bucur 1967; Răvăruţ 1968; Mihai 1972; Rusu 1972; Sanda 1973; Popescu 1976; Sanda 1978; Burac 1997; Pop 2000; Sârbu 2003		Neohalophyte (Bucur 1961); Mesotrophic, Mesohygrophilous (Ciocârlan 1988, 1990)	1990)		
P. incana P. Gaertn., B. Mey. et Scherb.	*P. arenaria* Borkh. – Csuros 1947; Samoilă 1957; Bucur 1961	H Per.	Neohalophyte (Bucur 1961); Oligotrophic, Xerophilous, Calciphilous, subtermophilic (Ciocârlan 1988, 1990)	Dry, degraded meadows (Ciocârlan 1988, 1990)		
P. supina L.	Sârbu 2001	TH-H Ann. – Per.	Mesothermophilic, Mesohygrophilous – Hygrophilous (Ciocârlan 1988, 1990)	Wet alluvial soils, more or less sandy (Ciocârlan 1988, 1990)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	Others
P. recta L.	Pătraşcu 1973; Bucur 1967	H Per.	Xeromesophilous, subtermophilic (Ciocârlan 1988, 1990)		1. 30, 60, 100 2. 30, 90, 290	
***Filipendula vulgaris* Moench**	Burac 1997; Pop 2000; *Filipendula hexapetala* Gilib. – Guşuleac 1933; Csuros 1947; Bucur 1957a Samoilă 1957; Mihai 1972; Samú 1982;	H Per.	Xeromesophilous – Mesophilous, Oligotrophic – Mesotrophic (Ciocârlan 1988, 1990)		1. 30, 60, 130 2. 55, 85, 1040	
F. ulmaria (L.) Maxim.	Guşuleac 1933	H Per.	Mesohygrophilous – Hygrophilous, Mesotrophic (Ciocârlan 1988, 1990)			
			Fabaceae			
Genista tinctoria* L. var. *ellata	Mihai 1972	Ch	Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)			
***Ononis arvensis* L.**	Mititelu 1978-1980; *Ononis hircina* Jacb. - Prodan	H Per.	Mesophilous – Mesohygrophilous (Ciocârlan 1988,	Meadows, riversides (Ciocârlan 1988,	1. 65, 80, 140 2. 85, 110, 170	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1956; Bucur 1957a; Samoilă 1957; Andrei 1962; Mihai 1972; Samú 1982		1990)	1990)		
O. spinosa L.	Popescu 1957; Samoilă 1957; Şerbănescu 1965	Ch – H		Meadows, dry places (Ciocârlan 1988, 1990)		
O. spinosa x arvensis	*O. pseudohircina* Schur. – Pop 2000		Supporting Halophyte (Țopa 1954)			
***Trigonella procumbens* (Besser) Rchb.** (Fig. 44)	Flora V; Buia 1960; Bucur 1967; Răvăruț 1968; Turenschi 1970; Doltu 1979; Sanda 1990b; Ciocârlan 1994; Ciocârlan 2000; *Trigonella besserana* Ser. – Țopa 1954	TH Ann	Mesotrophic, Mesophilous – Mesohygrophilous (Ciocârlan 1988, 1990)	Meadows, more or less ruderalized sometimes salinized places (Ciocârlan 1988, 1990)		
T. monspeliaca L.	Sanda 1984	TH Ann.	Oligotrophic, Xerophilous, termophile (Ciocârlan 1988, 1990)	Dry meadows, sandy soils (Ciocârlan 1988, 1990)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	Others
T. coerulea (Lam.) Ser.	Prodan 1939; Bucur 1961	TH Ann.	II categ. (Prodan 1939); Neohalophyte (Bucur 1961)		1. 60, 80, 100 2. 70, 80, 500	
***Medicago minima* (L.) L.**	Prodan 1939; Bucur 1957a: Samoilă 1960; Şerbănescu 1965; Răvăruț 1968; Sanda 1984	TH Ann.	II categ. (Prodan 1939) Oligotrophic, Xerophilous – Xeromesophilous, termophile – subtermophilic (Ciocârlan 1988, 1990)	Dry meadows, sands (Ciocârlan 1988, 1990)	1. 65, 70, 95 2. 140, 600,1375	
M. falcata L.	Bucur 1957a, b; Samoilă 1960; Bucur 1961; Csuros 1961; Csuros-Kaptalan 1965; Şerbănescu 1965; Bucur 1967; Răvăruț 1968; Rusu 1972; Pătraşcu 1973; Cîrțu 1977; Samú 1982; Pop 2000; *M. falcata* L.	H Per.	Neohalophyte (Bucur 1961); Xerophilous – Xeromesophilous, neutrophile – alkaliphilous (Ciocârlan 1988, 1990)		1. 20, 75, 130 2. 50, 100, 1500	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	var. *romanica* – Popescu 1975; Popescu 1976; Sanda 1990a					
M. arabica (L.) Huds.	Şerbănescu 1965; Sanda 1991	TH Ann.	Mesotrophic, Xeromesophilous – mesophilous (Ciocârlan 1988, 1990)			
M. lupulina L. (Fig. 45)	Prodan 1923; Csuros 1947; Prodan 1956; Bucur 1957a, b; Buia 1959; Samoilă 1960; Bucur 1961; Şerbănescu 1965; Bucur 1966; Bucur 1967; Răvăruț 1968; Mihai 1969; Rusu 1972; Dobrescu 1973; Popescu 1975; Sanda 1978; Pop 1980; Pop 1983; Sanda 1984; Coste	TH-H Ann. – Per	Neohalophyte (Bucur 1961)	Xeromesophilous – Mesohygrophilous, Mesotrophic (Ciocârlan 1988, 1990)	1. 20, 85, 280 2. 30, 90, 1400	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1993; Pop 2000					
M. sativa L.	Pop 1980	Ch-H Per.				
***Melilotus dentata* (Waldst. et Kit.) Pers.** (Fig. 46)	Prodan 1922; Prodan 1939; Flora V; Ciocârlan 1994 Ciocârlan 2000; *M. dentatus* – Ştefan 1995b;	Ht Bisann.	Mesophilous – Mesohygrophilous (Ciocârlan 1988, 1990)	Wet more or less salinized meadows (Ciocârlan 1988, 1990)		
M. officinalis (L.) Lam.	Prodan 1923; Bucur 1961; Bucur 1967; Samú 1982; Pop 1983; Pop 2000	Ht Bisann.	Neohalophyte (Bucur 1961) Eutrophic – Mesotrophic, Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)		1. 20, 65, 410 2. 35, 70, 1600	
M. albus Medik.	Andrei 1962; Popescu 1963; M. *alba* – Prodan 1923; Samoilă 1957; Samú 1982	Ht Bisann.	Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)			
M. macrorrhiza Pers.	Fuss 1866					
M. altissimus	Flora V; Ciocârlan	Ht	Eutrophic –	Watersides, wet		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
Thuill.	1994; Ciocârlan 2000	Bisann.	Mesotrophic, Mesohygrophilous (Ciocârlan 1988, 1990)	meadows, alluvial soils, more or less salinized places (Ciocârlan 1988, 1990)		
***Trifolium micranthum* Viv.** (Fig. 47)	Flora V; Prodan 1956; Samoilă 1957; Pop 1959; Bujorean 1961; Popescu 1963; Grigore 1965; Țopa 1969; Doltu 1979; Ardelean 1980; Sanda 1991; Coste 1993; Pop 2000; Sârbu 2001; *T. dubium* Sibth. – Samoilă 1960; Grigore 1965; *T. minus* Sm. – Prodan 1923; *T. filiforme* L. - Prodan 1923; Prodan 1939; Ciocârlan 1994;	TH Ann.	II categ. (Prodan 1939); Oligotrophic, subtermophilic (Ciocârlan 1988, 1990)	Wet, often salinized meadows (Ciocârlan 1988, 1990)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Ciocârlan 2000					
T. vesiculosum Savi	Sanda 1991; Ciocârlan 2000	TH Ann.	Oligotrophic, Xeromesophilous – Mesophilous, Subtermophilic (Ciocârlan 1988, 1990)	Meadows, sometimes salinized (Ciocârlan 1988, 1990)		
T. fragiferum L. (Fig. 48)	Prodan 1922; Prodan 1939; Răvăruț 1941; Csuros 1947; Todor 1948; Țopa 1954; Prodan 1956; Flora V; Popescu 1957; Samoilă 1957; Buia 1959; Pop 1959; Samoilă 1960; Bucur 1961; Csuros 1961; Gușuleac 1962; Popescu 1963; Pall 1964; Andrei 1965; Csuros-Kaptalan 1965; Grigore 1965; Mititelu 1965;	H Per.	II categ. (Prodan 1939); Preferential Halophyte (Țopa 1954, Andrei 1965); Neohalophyte (Bucur 1961); Eutrophic, Mesohygrophilous (Ciocârlan 1988, 1990)	Wet meadows, watersides, often in more or les salinized habitats (Ciocârlan 1988, 1990)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Şerbănescu 1965; Borza 1966; Răvăruț 1968; Mihai 1969; Mititelu 1969; Pop 1969a; Țopa 1969; Csuros 1970; Turenschi 1970; Mihai 1972; Dobrescu 1973; Pătraşcu 1973; Popescu 1976; Cîrțu 1977; Pop 1977; Ivan 1978; Sanda 1978; Doltu 1979; Mititelu 1978-1980; Popescu 1981; Popescu 1984; Sanda 1984; Antohe 1986; Mititelu 1987; Popescu 1987; Sanda 1990b; Sanda 1991; Coste 1993; Coste 1993; Ciocârlan 1994;					

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Sârbu 1995a; Burac 1997; Ciocârlan 2000; Pop 2000; Ştefan 2001b; Ştefan 2002; *T. neglectum* C.A. Mey. – Mititelu 1965					
T. resupinatum L.	Buia 1959; Şerbănescu 1965; Sanda 1991; Ciocârlan 2000; Pop 2000	TH-Ht, Ann. – Bisann.	Eutrophic – Mesotrophic, Mesophilous – Mesohygrophilous (Ciocârlan 1988, 1990)	More or less wet meadows, riversides, sometimes more or less salinized places (Ciocârlan 1988, 1990)		
T. striatum L. (Fig. 49)	Fuss 1866; Prodan 1923; Prodan 1939; Flora V; Samoilă 1957; Samoilă 1960; Bujorean 1961; Popescu 1963; Grigore 1965; Şerbănescu 1965; Ţopa 1969; Mititelu 1971a; Mititelu	TH Ann.	II categ. (Prodan 1939); Xerophilous – Xeromesophilous, Termophile – subtermophilic (Ciocârlan 1988, 1990)	Dry degraded meadows (Ciocârlan 1988, 1990)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1975b; Sanda 1991; Coste 1993; Pop 2000; *T. striatum* L. var. *genuinum* Lange – Todor 1948; *T. striatum* L. var. *incanum* (Presl.) A. et G. – Ardelean 1980					
T. campestre Schreb.	Prodan 1939; Bucur 1957a; Samoilă 1957; Buia 1959; Samoilă 1960; Grigore 1965; Pop 2000	TH Ann.	II categ. (Prodan 1939); Xeromesophilous – Mesophilous, Oligotrophic – Mesotrophic (Ciocârlan 1988, 1990)		1. 55, 80, 110 2. 65, 90, 280	
T. repens L.	Prodan 1923; Todor 1948 ; Prodan 1956; Bucur 1957a ; Samoilă 1957; Pop 1959 ; Flora V; Andrei 1962; Popescu 1963; Grigore 1965;	H Per.			1. 50, 80, 180 2. 20, 80, 410	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Mititelu 1965; Şerbănescu 1965; Boşcaiu 1966; Mihai 1969; Mihai 1972; Sanda 1973; Mihai 1977; Pop 1983; Mititelu 1987; Sanda 1991; Coste 1993; Pop 2000; Ştefan 2001b; Ştefan 2002					
T. pratense L.	Guşuleac 1933; Csuros 1947; Prodan 1956; Bucur 1961; Şerbănescu 1965; Bucur 1967; Pop 1977; Pop 1980; Samú 1982; Pop 2000	H Per.	Neohalophyte (Bucur 1961); Xeromesophilous – Mesophilous, Mesotrophic – Eutrophic (Ciocârlan 1988, 1990)		1. 50, 85, 175 2. 65, 90, 190	
T. pannonicum Jacq.	Bucur 1957a	H Per.	Xeromesophilous – Mesophilous, Mesotrophic (Ciocârlan 1988, 1990)		1. 28, , 38 2. 15, , 24	
T. arvense L	Bucur 1957a;	TH	Oligotrophic,	Meadows, more	1. 20, 45, 95	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Samoilă 1957; Buia 1959; Şerbănescu 1965; Răvăruț 1968; Samú 1982;	Ann.	Xeromesophilous., less to moderately acidophile, calciphobous (Ciocârlan 1988, 1990)	or less sandy soils (Ciocârlan 1988, 1990)	2. 65, 110, 140	
T. michelianum Savi.	Şerbănescu 1965; Sanda 1991	TH	Mesohygrophilous – Hygrophilous, subtermophilic, (Ciocârlan 1988, 1990)	Wet meadows, temporarily subjected to waterlogging (Ciocârlan 1988, 1990)		
T. ornithopodioides Oeder. (Fig. 50)	Prodan 1922; Prodan 1939; Flora V; Prodan 1956; Samoilă 1957; Bujorean 1961; Popescu 1963; Grigore 1965; Şerbănescu 1965; Dihoru 1969; Ardelean 1980; Doltu 1983; Sanda 1990b; Sanda 1991; Coste 1993;	TH Ann	I categ. (Prodan 1939); Oligotrophic, Mesohygrophilous., halophylous, subtermophilic (Ciocârlan 1988, 1990)	Wet salinized meadows (Ciocârlan 1988, 1990)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Ciocârlan 1994; Ciocârlan 2000; Pop 2000					
T. strictum L. (Fig. 51)	Prodan 1923; Prodan 1939; Prodan 1956; Bujorean 1961; Grigore 1965; Flora V; Doltu 1979; Sanda 1991; Coste 1993; Ciocârlan 2000	TH Ann.	I categ. (Prodan 1939); Xeromesophilous – Mesohygrophilous, halophylous, calciphobous (Ciocârlan 1988, 1990)	More or less wet and salinized meadows (Ciocârlan 1988, 1990)		
T. retusum L. (Fig. 52)	Ciocârlan 1994; Ciocârlan 2000; Pop 2000; Sârbu 2001; *T. parviflorum* Ehrh. – Prodan 1922; Prodan 1923; Prodan 1939; Răvăruț 1941; Prodan 1956; Flora V; Buia 1959; Pop 1959; Samoilă 1960; Bujorean	TH Ann.	I categ. (Prodan 1939); Xeromesophilous, halophilous (Ciocârlan 1988, 1990)	Dry, often more or less salinized meadows (Ciocârlan 1988, 1990)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1961; Popescu 1963; Grigore 1965; Mititelu 1965; Turenschi 1964; Şerbănescu 1965; Ţopa 1969; Turenschi 1970; Mititelu 1971a; Doltu 1979; Sanda 1990b; Sanda 1991; Coste 1993					
T. hybridum L.	Prodan 1922; Prodan 1939; Răvăruţ 1941; Samoilă 1957; Bucur 1961; Csuros 1961; Csuros-Kaptalan 1965; Grigore 1965; Şerbănescu 1965; Bucur 1967; Răvăruţ 1968; Mihai 1969; Turenschi 1970; Mihai 1972; Samú	H Per.	II categ. (Prodan 1939); Neohalophyte (Bucur 1961); Mesotrophic, Mesohygrophilous – Hygrophilous (Ciocârlan 1988, 1990)	Meadows, along watersides (Ciocârlan 1988, 1990)	1. 55, 75, 340 2. 40, 80, 690	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1982; Mititelu 1987; Pop 2000; *T. hybridum* – Bucur 1957a.					
T. pallidum Waldst et Kit.	Prodan 1939; Flora V; Grigore 1965	TH-Ht Ann-Bienn.	II categ. (Prodan 1939); Oligotrophic, Xerophilous – Xeromesophilous, subtermophilic (Ciocârlan 1988, 1990)			
T. angulatum Waldst. et. Kit. (Fig. 53)	Fuss 1866; Prodan 1923; Prodan 1939; Prodan 1956; Popescu 1957 b; Samoilă 1957; Buia 1959; Bujorean 1961; Şerbănescu 1965; Dihoru 1969; Doltu 1979; Grigore 1965; Ardelean 1980; Samú 1982; Sanda 1991; Coste 1993; Ciocârlan	TH Ann.	I categ. (Prodan 1939); Hygrohalophyte (Ciocârlan 1988, 1990)	Salinized meadows (Ciocârlan 1988, 1990)		

Species	**Authors with cited species/Synonyms**	**Life form**	**Halophyte type/ecological type**	**Habitat / Ecological spectrum**	**Salinity tolerance** **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	**Others**
	1994; Ciocârlan 2000; Pop 2000					
T. subterraneum L. (Fig. 54)	Prodan 1922; Prodan 1939; Samoilă 1957; Grigore 1965; Popescu 1963; Sanda 1991; Coste 1993; Ciocârlan 2000; Pop 2000	TH Ann.	II categ. (Prodan 1939); Xerophilous – Xeromesophilous, halophylous (Ciocârlan 1988, 1990)	Meadows, sandy and more or less salinized soils (Ciocârlan 1988, 1990)		
T. echinatum M. Bieb.	Buia 1959; *T. reclinatum* - Prodan 1939	TH Ann.	II categ. (Prodan 1939)	Temporarily wet eadows (Ciocârlan 1988, 1990)		
T. ambiguum M. Bieb.	Flora V	H Per.				
T. ochroleucon Huds.	*T. ochroleucum* Huds – Sch. Cent. XXIV-XXV 1943	H Per.	Xeromesophilous – Mesophilous, Oligotrophic (Ciocârlan 1988, 1990)			
T. incarnatum L.	Samoilă 1957; T. *incarnatum* L. var. *molinerii* – Pop 2000	TH Ann.				

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
***Lotus angustissimus* L.** (Fig. 55)	Prodan 1939; Flora V; Samoilă 1957; Pop 1959; Samoilă 1960; Popescu 1963; Doltu 1979; Mititelu 1978-1980; Sanda 1990b; Coste 1993; Ciocârlan 1994; Ciocârlan 2000; Pop 2000; *L. angustissimum* L. – Sanda 1991; L. *gracilis* W. K. - Prodan 1922; Prodan 1923; Prodan 1939; *L. angustissimus* L. var. *brachypodus* Candargy – Horeanu 1972	TH Ann.	I categ. (Prodan 1939); Oligotrophic, Xerophilous, halophylous (Ciocârlan 1988, 1990)	Ruderalized meadows, more or less salinized (Ciocârlan 1988, 1990)		
L. tenuis Waldst. et Kit. ex Willd. (Fig. 56)	Sch. Cent I 1921; Csuros 1947; Flora V; Prodan 1956; Popescu 1957a; Popescu 1957 b;	H Per.	I categ. (Prodan 1939); Preferential Halophyte (Țopa 1954, Andrei 1965); Mesotrophic,	Wet, salinized meadows (Ciocârlan 1988, 1990)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Samoilă 1957; Samoilă 1960; Bujorean 1961; Csuros 1961; Popescu 1963; Pall 1964; Andrei 1965; Şerbănescu 1965; Borza 1966; Sanda 1967; Răvăruț 1968; Pop 1969a; Țopa 1969; Mititelu 1971a; Popescu 1971; Mititelu 1972; Rusu 1972; Pătraşcu 1973; Popescu 1973; Sanda 1973; Mititelu 1975b; Popescu 1976; Pop 1977; Ivan 1978; Mititelu 1978-1980; Pop 1980; Popescu 1981; Samú 1982; Pop 1983; Popescu 1984; Sanda 1984;		Mesohygrophilous, halophylous (Ciocârlan 1988, 1990)			

Species	**Authors with cited species/Synonyms**	**Life form**	**Halophyte type/ecological type**	**Habitat / Ecological spectrum**	**Salinity tolerance** **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	**Others**
	Mititelu 1987; Sanda 1990b; Sanda 1991; Coste 1993; Sârbu 1995a; Ştefan 1995b ; Pop 2000; Sârbu 2001; Ştefan 2002; Sârbu 2003; *L. tenuifolius* L. - Fuss 1866; Prodan 1922; Buj. 1934; Prodan 1939; Țopa 1939; Țopa 1954; Pop 1959; Csuros-Kaptalan 1965; *L. glaber* Mill. – Ciocârlan 1994; Ciocârlan 2000					
L. corniculatus L. (Fig. 57)	Guşuleac 1933; Csuros 1947; Prodan 1956; Bucur 1957a b; Buia 1959; Pop 1959; Bucur 1961; Turenschi 1964; Şerbănescu	H Per.	Neohalophyte (Bucur 1961)		1. 20, 90, 270 2. 20, 100, 1510	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1965; Boşcaiu 1966; Bucur 1967; Răvăruț 1968; Dobrescu 1969; Mihai 1969; Turenschi 1970; Mihai 1972; Sanda 1978; Samú 1982; Sanda 1991; Coste 1993; Pop 2000; *L. corniculatus* L. ssp. *eucorniculatus* A. u. G. var. *arvensis* (Pers.) Ser. f. *genuinus* Posp. and ssp. *tenuis* (Kit.) Briq – Todor 1948					
***Galega officinalis* L.**	Prodan 1939; Bucur 1961; Țopa 1969; Mihai 1972; Ştefan 1995b ; Ştefan 2006	H Per.	II categ. (Prodan 1939); Neohalophyte (Bucur 1961); Mesotrophic, Hygrophilous (Ciocârlan 1988, 1990)	Wet meadows, riversides (Ciocârlan 1988, 1990)	1. 108, 180, 450 2. 110, 200,1240	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	Others
***Astragalus cicer* L.**	Bucur 1957a	H Per	Oligotrophic, Xeromesophilous (Ciocârlan 1988, 1990)		1. , 80 , 2. ,120,	
A. monspessulanus L.	Csuros-Kaptalan 1965	H Per.	Oligotrophic, Xerophilous – Xeromesophilous, Calciphilous, termophile – subtermophilic (Ciocârlan 1988, 1990)			
A. onobrychis L.	Bucur 1957a; Răvăruț 1968	H Per.	Oligotrophic, Xerophilous – Xeromesophilous, preferential calciphilous (Ciocârlan 1988, 1990)		1. 60, , 70 2. 55, , 170	
***Tetragonolobus maritimus* (L.) Roth.** (Fig. 58)	Ciocârlan 1994; Ciocârlan 2000; Sârbu 2001; *Lotus siliquosus* L. – Prodan 1922; Prodan 1939; Țopa	H Per.	II categ. (Prodan 1939); Supporting Halophyte (Țopa 1954); Oligotrophic, Mesohygrophilous – Hygrophilous	More or less wet meadows, often salinized (Ciocârlan 1988, 1990)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	Others
	1954; Csuros 1970; *Tetragonolobus siliquosus* (L.) Roth – Todor 1948; Flora V		(Ciocârlan 1988, 1990)			
***Glycyrrhiza echinata* L.**	Prodan 1922; Prodan 1939; Isăcescu 1939; Şerbănescu 1965; Grigore 1978	H Per.	II categ. (Prodan 1939); Mesotrophic, Mesohygrophilous, subtermophilic (Ciocârlan 1988, 1990)			
***Coronilla varia* L.**	Bucur 1957a ; Bucur 1967	H Per.	Oligotrophic – Mesotrophic, Xeromesophilous (Ciocârlan 1988, 1990)		1. 65, 70, 76 2. 60, 65, 140	
***Vicia sativa* L.**	Bucur 1961	TH Ann.	Neohalophyte (Bucur 1961)		1. 65, 90, 200 2. 20, 65, 140	
V. cracca L.	Csuros 1947; Bucur 1961; Bucur 1967		Neohalophyte (Bucur 1961)		1. 38, 50, 65 2. 75, 90, 120	
V. tetrasperma (L.) Schreb.	Bucur 1961; Şerbănescu 1965; Bucur 1967; Pop 2000	TH Ann.	Neohalophyte (Bucur 1961); Xeromesophilous – Mesophilous,		1. 28, 85, 200 2. 25, 80, 85	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
			Oligotrophic – Mesotrophic (Ciocârlan 1988, 1990)			
V. biennis L.	Ştefan 1995b; *V. picta* Fisch. Et Mey. – Flora V	TH-Ht Ann.-Bienn.	Mesohygrophilous (Ciocârlan 1988, 1990)			
V. grandiflora Scop.	Samoilă 1957; Popescu 1963	H Per.				
V. villosa Roth	Bucur 1967	TH-Ht Ann. Hib.	Xeromesophilous (Ciocârlan 1988, 1990)			
V. lathyroides L.	Prodan 1923	TH-Ht Ann. Hib.	Oligotrophic, Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)			
***Lathyrus hirsutus* L.**	Bucur 1957a	TH Ann	Xeromesophilous, Mesotrophic (Ciocârlan 1988, 1990)		1. 60, 65, 85 2. 75, 80, 85	
L. tuberosus L.	Bucur 1961; Şerbănescu 1965; Bucur 1967	H Per.	Neohalophyte (Bucur 1961); Xeromesophilous – Mesophilous,		1. 20, 70, 130 2. 25, 95, 1210	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
			Mesotrophic (Ciocârlan 1988, 1990)			
L. pratensis L.	Mihai 1972	H Per.	Xeromesophilous – Mesohygrophilous, Mesotrophic (Ciocârlan 1988, 1990)			
***Halimodendron halodendron* (Pall.) Voss**	<u>(Flora V)</u> ?					<u>It hs been recommended to be used for phytoremediation of saline soils</u>
Haloragaceae						
***Myriophyllum spicatum* L.**	Popescu 1963; Sanda 1969;	HD Per.		Stagnant slowly flowing waters (Ciocârlan 1988, 1990)		
Lythraceae						
***Peplis portula* L.**	Pop 1959; Csuros 1968; Popescu 1963; Pop 2000	TH Ann	Mesotrophic, Mesohygrophilous – Hygrophilous, Calciphobous (Ciocârlan 1988,			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
			1990)			
***Lythrum salicaria* L.** (Fig. 59)	Bucur 1961; Csuros-Kaptalan 1965; Boşcaiu 1966; Popescu 1976; Pop 1977; Grigore 1978; Popescu 1981; Ştefan 1995b; Ciocârlan 2000; Pop 2000; Ştefan 2001b; Ştefan 2006	H Per.	Neohalophyte (Bucur 1961); Mesotrophic, Hygrophilous (Ciocârlan 1988, 1990)	Marshy meadows, watersides (Ciocârlan 1988, 1990)	1. 65, 150, 490 2. 70, 100, 125	
L. virgatum L. (Fig. 60)	Țopa 1954; Prodan 1956; Popescu 1957 b; Samoilă 1957; Bucur 1961; Bucur 1967; Țopa 1969; Popescu 1973; Pop 1977; Samú 1982; Mititelu 1987; Ciocârlan 2000; Pop 2000; Ştefan 2001b; Ştefan 2006	H Per.	Supporting Halophyte (Țopa 1954); Neohalophyte (Bucur 1961); Mesotrophic, Hygrophilous (Ciocârlan 1988, 1990)		1. 60, 110, 205 2. 55, 75, 190	
L. hyssopifolia L.	Prodan 1922; Prodan 1939; Țopa	TH Ann.	II categ. (Prodan 1939);	Wet places, watersides		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1969; Ciocârlan 1994; Pop 1959; Boşcaiu 1966; Coste 1993; Pop 2000; Sârbu 2001		Hygrophilous (Ciocârlan 1988, 1990)	(Ciocârlan 1988, 1990)		
L. tribracteatum Salzm. ex Spreng.	Flora V; Popescu 1963	Th Ann.	Oligotrophic – Mesotrophic, Hygrophilous (Ciocârlan 1988, 1990)	Marshy meadows, alluvial soils, watersides (Ciocârlan 1988, 1990)		
Onagraceae						
***Epilobium palustre* L.**	Ştefan 2006	H Per.	Eutrophic, Hygrophilous, Calciphobous (Ciocârlan 1988, 1990)	Marshy meadows, riversides, peatlands (Ciocârlan 1988, 1990)		
E. parviflorum Schreb.	Ştefan 2006	H Per.	Hygrophilous (Ciocârlan 1988, 1990)	Wet places, marshes, riversides, marshy meadows (Ciocârlan 1988, 1990)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
			Santalaceae			
***Thesium arvense* Horv.**	Sârbu 2001	Ht-H Bienn.	Xeromesophilous (Ciocârlan 1988, 1990)			
			Eleagnaceae			
***Hippophaë rhamnoides* L.** (Fig. 61)	Flora IV; Ciocârlan 1994; Ciocârlan 2000		Oligotrophic, Xerophilous – Mesohygrophilous (Ciocârlan 1988, 1990)	Riversides, stony soils, saline areas (Ciocârlan 1988, 1990)		
			Euphorbiaceae			
***Euphorbia cyparissias* L.**	Prodan 1922; Prodan 1923; Prodan 1939; Bucur 1957a; Samoilă 1957; Buia 1959; Samoilă 1960; Şerbănescu 1965; Doltu 1979; Sanda 1991; Coste 1993; Pop 2000	H Per.	III categ. (Prodan 1939); Xeromesophilous (Ciocârlan 1988, 1990)		1. 60, 70, 80 2. 94, 105, 110	
E. virgata Waldst. et Kit.	Prodan 1922; Bucur 1961; Şerbănescu 1965	H Per.	Neohalophyte (Bucur 1961); Mesotrophic, Xeromesophilous –		1. 215, , 275 2. 870, , 1550	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
			Mesophilous (Ciocârlan 1988, 1990)			
E. seguieriana Necker	*E. gerardiana* Jacq. – Prodan 1923; Prodan 1939; Bucur 1957a; Sârbu 2003	H Per.	II categ. (Prodan 1939); Oligotrophic, Xerophilous – Xeromesophilous, termophile – subtermophilic (Ciocârlan 1988, 1990)	Sands, dry meadows (Ciocârlan 1988, 1990)	1. , , 120 2. , , 740	
E. palustris L.	Bucur 1957a; Bucur 1961	H Per.	Neohalophyte (Bucur 1961); Hygrophilous (Ciocârlan 1988, 1990)	Marshes, riversides (Ciocârlan 1988, 1990)	1. , , 380 2. , , 110	
E. helioscopia L.	Şerbănescu 1965	TH Ann.	Eutrophic, Xeromesophilous, Mesophilous (Ciocârlan 1988, 1990)			
E. platyphilos L.	Bucur 1957a; Şerbănescu 1965	TH Ann.	Eutrophic, Xeromesophilous – Mesophilous		1. 55, , 65 2. 55, 65, 75	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	Others
			(Ciocârlan 1988, 1990)			
E. esula L.	Bucur 1957a	H Per.	Mesotrophic, Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)		1. ,55, 2. ,65,	
E. nicaeensis All.	Sanda 1984	H Per.	Xerophilous – Xeromesophilous, termophile – subtermophilic (Ciocârlan 1988, 1990)			
E. paralias L.	Ciocârlan 1994	H Per.		Maritime sands (Ciocârlan 1988, 1990)		
E. peplis L.	Pop 1969b; Ciocârlan 1994	TH Ann.				
E. salicifolia Host	Guşuleac 1933	H Per.	Eutrophic, Xeromesophilous – Mesohygrophilous, subtermophilic (Ciocârlan 1988, 1990)			
E. agraria M.	Bucur 1957a, b	H	Xerophilous –			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
Bieb.		Per.	Xeromesophilous, termophile – subtermophilic (Ciocârlan 1988, 1990)			
E. maculata L.	Doltu 1984	TH Ann.				
E. lucida Waldst. et Kit.	Bucur 1957a	H. Per,	Mesotrophic, mesohygrophilous - higrophilous (Ciocarlan, 2009)		1. 60, , 130 2. 70, , 530	
Zygophyllaceae						
***Peganum harmala* L.**	Prodan 1922	H Per.		Dry places (Ciocârlan 1988, 1990)		
***Zygophyllum fabago* L.**	Prodan 1922; Prodan 1939	H Per.	III categ. (Prodan 1939)			
***Tribulus terrestris* L**	Pop 1969b; Sârbu 2003					
***Nitraria schoberi* L.** (Fig. 62)	Grecescu 1898; Pax 1919; Prodan 1922; Sch. Cent. XV-XVI 1936; Prodan 1939; Țopa 1954; Moșneagă 1958;	Ph	I categ. (Prodan 1939); Obligatory Halophyte (Țopa 1954)	Highly salinized meadows (Ciocârlan 1988, 1990)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Flora VI; Ciocârlan 1972; Doltu 1979; Mititelu 1978-1980; Sanda 1990b; Ciocârlan 2000; Pop 2000					
			Geraniaceae			
***Geranium collinum* Stephan**	Flora VI; Ciocârlan 2000; Sârbu 2001	H Per.	Mesohygrophilous (Ciocârlan 1988, 1990)	Ruderalized sometimes less salinized meadows (Ciocârlan 1988, 1990)		
G. dissectum L.	Prodan 1922; Prodan 1939	TH Ann.	II categ. (Prodan 1939); Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)			
G. columbinum L.	Flora VI	TH Ann.	Xeromesophilous (Ciocârlan 1988, 1990)			
G. pussilum Burm. f. –	Prodan 1956; Pătraşcu 1973;	TH Ann.	Xeromesophilous – Mesophilous			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
Buchet	Sanda 1984		(Ciocârlan 1988, 1990)			
***Erodium cicutarium* (L.) L' Hérit.**	Bucur 1957a, b; Samoilă 1957; Bucur 1961; Şerbănescu 1965; Răvăruț 1968; Pop 1969b; Pătraşcu 1973; Sanda 1984; Sanda 1991; Pop 2000	TH Ann.	Neohalophyte (Bucur 1961); Xeromesophilous, Eutrophic (Ciocârlan 1988, 1990)		1. 15, 65, 180 2. 25, 80, 200	
Apiaceae						
***Torillis japonica* L.**	Sanda 1984	TH Ann.	Xeromesophilous (Ciocârlan 1988, 1990)			
***Daucus carota* L.**	Prodan 1923; Csuros 1947; Bucur 1957a; Samoilă 1957; Popescu 1957 a,b; Pop 1959; Popescu 1963; Şerbănescu 1965; Mihai 1972; Samú 1982; Sanda 1984;	Biann Ann. Hibernant	Eurytrophe, eurytermophile, euryacidophile (Ciocârlan 1988, 1990)		1. 30, 70, 110 2. 20, 80, 390	

Species	**Authors with cited species/Synonyms**	**Life form**	**Halophyte type/ecological type**	**Habitat / Ecological spectrum**	**Salinity tolerance** **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	**Others**
	Coste 1993; Sârbu 1995a; Pop 2000					
***Anthriscus sylvestris* (L.) Hoffm.**	Bucur 1957a	Ht-H Bienn. – Per.	Mesophilous – Mesohygrophilous (Ciocârlan 1988, 1990)		1. , , 1215 2. , , 1625	
***Eryngium maritimum* L.**	Prodan 1939; Sârbu 2000	H Per.	I categ. (Prodan 1939)	Maritime sands (Ciocârlan 1988, 1990)		
E. campestre L.	Csuros 1947; Prodan 1956; Bucur 1957a, b; Samoilă 1957; Mihai 1969; Mihai 1972; Sanda 1978; Sanda 1984; Sanda 1991; Coste 1993; Pop 2000; Sârbu 2000	H Per.	Oligotrophic, Xerophilous – Xeromesophilous (Ciocârlan 1988, 1990)		1. 25, 70, 120 2. 45, 110, 480	
E. planum L.	Guşuleac 1933; Csuros 1947; Prodan 1956; Bucur 1957a; Csuros-Kaptalan 1965; Răvăruț 1968	H Per.	Oligotrophic – Mesotrophic, Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)		1. 60, 95, 390 2. 95, 300, 1920	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	Others
? *Petroselinum latifolium*	Fuss 1866					
***Caucalis platycarpos* L.**	*Caucalis lappula* Grande – Bucur 1957a	TH Ann.	Xeromesophilous (Ciocârlan 1988, 1990)		1. 30, 55, 95 2. 40, 80, 250	
***Bupleurum tenuissimum* L.** (Fig. 63)	Prodan 1922; Sch. Cent. VIII-IX 1928; Guşuleac 1933; Țopa 1935; Prodan 1939; Răvăruț 1941; Csuros 1947; Țopa 1954; Prodan 1956; Prodan 1956; Samoilă 1957; Bucur 1960; Flora VI; Csuros 1961; Andrei 1962; Popescu 1963; Borza 1964; Andrei 1965; Şerbănescu 1965; Borza 1966; Țopa 1969; Mititelu 1971a; Ciocârlan 1972; Sanda 1973; Ivan 1978; Mititelu	TH Ann.	I categ. (Prodan 1939); Preferential Halophyte (Țopa 1954, Andrei 1965); Euhalophyte (Bucur 1960a); Xerophilous – Xeromesophilous, Xeroxalophilous (Ciocârlan 1988, 1990)	Ruderalized, less salinized meadows (Ciocârlan 1988, 1990); annual plant, quite frequent in salty areas; mesophilous to xerophylous, mesothermophile, heliophilous, sometimes sciophilous, less alkaliphilous; less to moderately halophytic species. Indicates less salinized	1. 40, 90, 505 2. 90, 110, 1210	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1978-1980; Pop 1983; Popescu 1984; Sanda 1984; Mititelu 1987; Mititelu 1988; Sanda 1990b; Sanda 1991; Coste 1993; Ciocârlan 1994; Ciocârlan 2000; Pop 2000; Sârbu 2001; *B. tenuisimum* L. ssp. *eutenuissimum* Wolff a *genuinum* Godr. – Țopa 1939; *B. tenuissimum* L., var. *salinum* Fr. f. *longibracteatum* (H. Wolff.) Thell. – Andrei 1965			watermeadows, that could be cultivated (Bucur 1960a). This gracile species occurs as isolated individuals in areas well covered by vegetation (Grigore pers. obs.)		
B. rotundifolium L	Bucur 1957a	TH Ann.	Xeromesophilous, subtermophilic (Ciocârlan 1988, 1990)		1. , 70, 2. , 80,	
Apium	Fuss 1866; Prodan	Ht	II categ. (Prodan	Wet, less		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
***graveolens* L.**	1939; Flora VI; Țopa 1954; Ciocârlan 1994; Ştefan 1995b; Ciocârlan 2000; Sârbu 2000	Bienn.	1939); Preferential Halophyte (Țopa 1954)	salinized places (Ciocârlan 1988, 1990)		
***Trinia ramosissima* (Fisch. ex Trev.) W. D. J. Koch**	*Trinia kitaibelii* M.B. – Guşuleac 1933; Bucur 1957a	Ht-H Bienn.	Xerophilous – Xeromesophilous, Subtermophilic, (Ciocârlan 1988, 1990)		1. 25, 60, 95 2. 25, 70, 100	
***Pimpinella saxifraga* L.**	Csuros 1947; Prodan 1956; Pop 2000	H Per.	Oligotrophic, Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)			
***Sium latifolium* L.**	Bucur 1960; Mihai 1969; Ştefan 2001b;	HD Per.	Euhalophyte (Bucur 1960a); Eutrophic, Hygrophilous (Ciocârlan 1988, 1990)	Stagnant waters, marshes (Ciocârlan 1988, 1990)	1. 120, 160, 250 2. 100, 140, 190	
S. sisarum L. var. *lancifolium* (M. Bieb.) Thell.	*S. lancifolium* M. Bib. – Guşuleac 1933; Mihai 1969	HD Per.	Eutrophic, Hygrophilous (Ciocârlan 1988, 1990)	Marshy meadows, shallow marshes (Ciocârlan 1988,		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
				1990)		
***Berula erecta* (Huds.) Coville**	*S. erectum* Huds. – Buj. 1934; Răvăruț 1968; Mihai 1977	HD Per.	Eutrophic, Hygrophilous – Hydrophylous (Ciocârlan 1988, 1990)	Marshy places, riversides (Ciocârlan 1988, 1990)		
***Silaum silaus* (L.) Schinz et Thell.**	Dobrescu 1969; Turenschi 1970; Ciocârlan 2000; Sârbu 2001; *Silaum flavescens* Bennh. – Bucur 1957 a	H Per.	Oligotrophic, Mesophilous – Mesohygrophilous (Ciocârlan 1988, 1990)	More or less wet, sometimes salinized meadows (Ciocârlan 1988, 1990)	1. 65, 80, 880 2. 90, 210, 1380	
***Falcaria vulgaris* Bernh.**	Bucur 1957a	Ht (TH, H) Biann (Ann., Per.)	Xerophilous – Xeromesophilous (Ciocârlan 1988, 1990)		1. 60, 70, 80 2. 55, 65, 80	
***Seseli annuum* L.**	Bucur 1957a; Bucur 1961; Flora VI; Samú 1982; Pop 1983	Ht-H, Bienn.	Neohalophyte (Bucur 1961); Oligotrophic, Xerophilous – Xeromesophilous (Ciocârlan 1988, 1990)		1. 55, 120, 735 2. 80, 450, 1115	
S. osseum Crantz	Prodan 1939;	H	II categ. (Prodan			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
em. Simonk.	Csuros-Kaptalan 1965	Per.	1939); Oligotrophic Xerophilous (Ciocârlan 1988, 1990)			
S. peucedanoides (M. Bieb.) Koso – Pol	*Silaum peucedanoides* (M. Bieb.) Nyár. – Todor 1948	H Per.	Xeromesophilous, Oligotrophic, Calciphilous (Ciocârlan 1988, 1990)			
***Oenanthe silaifolia* M. Bieb.** (Fig. 64)	Prodan 1939; Țopa 1954; Bucur 1957a; Popescu 1957b; Samoilă 1957; Bucur 1961; Şerbănescu 1965; Bucur 1966; Bucur 1967; Cristurean 1973; Nedelcu 1973; Doltu 1979; Popescu 1984; Sanda 1991; Pop 2000	H Per.	II categ. (Prodan 1939); Preferential Halophyte (Țopa 1954); Neohalophyte (Bucur 1961); Mesohygrophilous (Ciocârlan 1988, 1990)	Wet, marshy meadows (Ciocârlan 1988, 1990)	1. 80, 100, 380 2. 50, 95, 1610	
O. aquatica (L.) Poir	Guşuleac 1933; Bucur 1957a; Pop	HD Ann.,	Eutrophic (Ciocârlan 1988,	Marshes, stagnant waters	1. 75, 120, 80 2. 60, 120, 1110	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1959; Popescu 1981; Sanda 1991; Ştefan 2001b; Ştefan 2006	Bienn.	1990)	or less flowing (Ciocârlan 1988, 1990)		
? ***Ferula tatarica* Fisch. Ex Spreng.**	Prodan 1939	H Per.	I categ. (Prodan 1939); Xeromesophilous, Calciphilous, Termophile (Ciocârlan 1988, 1990)			Mentioned in the past as vegetating in the eastern part of Romania, towards former Soviet Union (Flora VI)
***Peucedanum latifolium* (M. Bieb.) DC**. (Fig. 65)	Brandza 1879-1883; Prodan 1922; Guşuleac 1933; Sch. Cent. XII-XIV 1934 ; Prodan 1939; Țopa 1939; Răvăruț 1941; Csuros 1947; Țopa 1954; Bucur 1960a; Flora VI; Csuros 1961; Teşu 1964; Mititelu 1965; Şerbănescu 1965; Bucur 1966;	H Per.	I categ. (Prodan 1939); Obligatory Halophyte (Țopa 1954); Euhalophyte (Bucur 1960a)	Wet, less salinized meadows (Ciocârlan 1988, 1990)	1. 55, 70, 520 2. 65, 160, 1710	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Bucur 1967; Csuros 1970; Ciocârlan 1972; Mihai 1972; Pătraşcu 1973; Doltu 1979; Sanda 1990b; Sanda 1991; Ciocârlan 1994; Ciocârlan 2000; Sârbu 2001					
P. alsaticum L.	Prodan 1922; Prodan 1939	H Per.	III categ. (Prodan 1939) ; Xerophilous, Xeromesophilous (Ciocârlan 1988, 1990)			
P. officinale L.	Prodan 1922; Prodan 1939; Prodan 1956; Prodan 1956; König 1961; Sanda 1991	H Per.	II categ. (Prodan 1939); Oligotrophic – Mesotrophic, Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)			
P. carvifolia Vill.	Guşuleac 1933	H Per.	Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
P. palustre (L.) Moench	Burac 1997	Ht-TH Biann – Per.	Hygrophilous (Ciocârlan 1988, 1990)	Marshy meadows, riversides (Ciocârlan 1988, 1990)		
***Pastinaca graveolens* M. Bieb.**	Bucur 1957a	Ht Bienn.	Xerophilous (Ciocârlan 1988, 1990)		1. , 25, 2. , 45,	
P. sativa L.	Prodan 1956; Bucur 1957a; Samú 1982;	Ht Bienn.	Xeromesophilous – Mesohygrophilous (Ciocârlan 1988, 1990)		1. , , 65 2. , , 340	
***Palimbia rediviva* (Pall.) Thell.**	Flora VI; Ciocârlan 1994; Ciocârlan 2000; Sârbu 2001; *Ferula salsa* – Prodan 1939	H Per.	I categ. (Prodan 1939)	Salinized meadows (Ciocârlan 1988, 1990)		
Hypericaceae						
***Hypericum perforatum* L.**	Bucur 1957a; Samú 1982;	H Per.	Oligotrophic, Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)		1. , 35, 2. , 45,	
Elatinaceae						
Elatine	Prodan 1922;	TH-HD,	III categ. (Prodan	Marshes, waters,		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
***alsinastrum* L.**	Prodan 1939	Ann. – Per.	1939); Hydrophylous – Hygrophilous (Ciocârlan 1988, 1990)	marshy meadows (Ciocârlan 1988, 1990)		
			Malvaceae			
***Malva pusilla* Sm.**	Şerbănescu 1965; Popescu 1976	TH Ann	Eutrophic, nitrophile, Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)			
***Althaea officinalis* L.**	Pax 1919; Țopa 1954; Bucur 1957°; Samoilă 1957; Flora VI; Mihai 1969; Țopa 1969; Rusu 1972; Mititelu 1987; Ciocârlan 1994; Sârbu 1995a; Ştefan 1995b; Ciocârlan 2000; Ştefan 2001b; *A. officinalis* ssp. *micrantha* - Prodan	H Per.	II categ. (Prodan 1939); Supporting Halophyte (Țopa 1954); Mesohygrophilous – Hygrophilous (Ciocârlan 1988, 1990)	Wet sometimes salinized places, riversides (Ciocârlan 1988, 1990)	1. 40, 90, 200 2. 45, 75, 95	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	Others
	1939					
Althaea rosea (L.) Cav.	Bucur 1957a	H Per.			1. , 70, 2. , 75	
***Hibiscus trionum* L.**	Bucur 1957a; Bucur 1957a, b; *H. ternatus* – Şerbănescu 1965	TH Ann.	Eutrophic, Xerpmesophilous – Mesophilous (Ciocârlan 1988, 1990)		1. 35, 60, 680 2. 35, 60, 930	
Violaceae						
***Viola arvensis* Murray**	Bucur 1957a	TH Ann.	Eurytrophe, Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)		1. , 45, 2. ,45,	
Tamaricaceae						
***Tamarix ramosissima* Ledeb.** (Fig. 66)	Ţopa 1954; Flora III; Andrei 1965; Şerbănescu 1965; Rusu 1972; Sanda 1973; Popescu 1976; Doltu 1979; Mititelu 1978-1980; Popescu 1987; Ciocârlan 1994;		II categ. (Prodan 1939); Preferential Halophyte (Ţopa 1954)	Alluvial sands, riversides, sometimes less salinized (Ciocârlan 1988, 1990)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Ciocârlan 2000; Pop 2000; Sârbu 2001; *T. pallasii* Desv. – Prodan 1922; Prodan 1939; Țopa 1939					
T. gallica L.	Rusu 1972					
T. tetrandra Pall. Ex M. Bieb.	Prodan 1939		III categ. (Prodan 1939)			
			Frankeniaceae			
***Frankenia pulverulenta* L.** (Fig. 67)	Pax 1919; Prodan 1922; Prodan 1939; Țopa 1954; Flora III; Andrei 1962; Popescu 1981; Doltu 1983; Ciocârlan 1994; Ciocârlan 2000; Sârbu 2001	Th Ann.	II categ. (Prodan 1939); Obligatory Halophyte (Țopa 1954)	Maritime sands and salinized habitats (Ciocârlan 1988, 1990)		
F. hirsuta L. (Fig. 68)	Doltu 1983; Popescu 1987; Sanda 1990b; Ciocârlan 1994;	Ch Per.	II categ. (Prodan 1939); Obligatory Halophyte (Țopa 1954)	Maritime sands, more or less wet salinized places (Ciocârlan 1988,		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Ciocârlan 2000; Pop 2000; Ştefan 2001a; *F. hspida* DC. – Flora III; Sârbu 2001; Prodan 1922; Țopa 1954; *F. hirsuta* L. ssp. *hispida* – Prodan 1939; Pop 2000			1990)		
			Brassicaceae			
***Chorispora tenella* (Pall.) DC**	Şerbănescu 1965; *Raphanus tenellus* Pall. – Isăcescu 1939	TH Winter Ann. Ht				
***Euclidium syriacum* (L.) W. T Aiton.**	Prodan 1922; Prodan 1939; Flora III; Csuros 1961; Sanda 1967; Ciocârlan 1972; Ciocârlan 2000; Sârbu 2001	TH Ann.	II categ. (Prodan 1939); Eutrophic, Xeromesophilous (Ciocârlan 1988, 1990)	Ruderalized, more or less salinized meadows (Ciocârlan 1988, 1990		
***Sisymbrium loeselii* L.**	Bucur 1957a; Dobrescu 1973	TH-Ht Ann., Bienn.	Xeromesophilous (Ciocârlan 1988, 1990)		1. 80, 90, 135 2. 75, 105, 140	
S. polymorphum	Flora III ; Ciocârlan	H	Xeromesophilous.	More or les		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
(Murray) Roth	1994 ; Ciocârlan 2000; *S. junceum* M. Bie. – Brandza 1879-1883	Per.	(Ciocârlan 1988, 1990)	salinized meadows (Ciocârlan 1988, 1990)		
S. officinale (L.) Scop	Mititelu 1972	TH-Ht Ann.	Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)			
***Descurainia sophia* (L.) Webb ex Prantl**	*S. sophia* L. – Şerbănescu 1965; Bucur 1967	TH-Ht Ann. – winter Ann.				
***Erysimum repandum* L.** (Fig. 69)	Edel 1835; Brandza 1879-1883; Bucur 1960; Şerbănescu 1965; Bucur 1967; Sanda 1978; Doltu 1979; Sanda 1984; Sanda 1990b; Ciocârlan 1994; Ciocârlan 2000; Pop 2000	TH Ann.	Euhalophyte (Bucur 1960); Xerophilous – Xeromesophilous, Eutrophic, Subtermophilic (Ciocârlan 1988, 1990)	Ruderal, less salinized places (Ciocârlan 1988, 1990); Mesophilous to xerophilous, mesothermophilc less sciophilous, weakly alkaliphilous, very weakly to moderately halophilous,	1. 55, 85, 315 2. 55, 80, 1930	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
				pasing to neohalophilous. It develops on salinized strongly ruderalized water meadows soils. It indicates salinized wet meadow soils, humid in the spring, dried in the summer (Bucur 1960a).		
E. crepidifolium Rchb.	Isăcescu 1939	Ht-H Bienn.-Per.	Xeromesophilous (Ciocârlan 1988, 1990)			
E. diffusum Ehrh.	Bucur 1957a	Ht-H Bienn.-Per.	Xerophilous – Xeromesophilous (Ciocârlan 1988, 1990)		1. , 65, 2. , 225,	
***Rorippa sylvestris* (L.) Besser**	Şerbănescu 1965; Mihai 1969; Pop 1969a; Mihai 1972; Sanda 1978; Burac	H Per.	I categ. (Prodan 1939); Neohalophyte (Bucur 1961);	Wet places, salinized (Ciocârlan 1988, 1990)	1. 48, 100, 265 2. 55, 110, 1630	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1997; Ciocârlan 2000; Ştefan 2002; Ştefan 2006; ssp. *sylvestris,* ssp. *kerneri* (Menyh.) Soó - Mititelu 1987; Mititelu 1988; Sanda 1991; Coste 1993; Ştefan 1995b; Pop 2000; *R. kerneri* Menyh . – Prodan 1939; Sch. Cent. XIX- XXI 1949; Răvăruț 1941; Flora III; Prodan 1956; Bucur 1957a; Pop 1959; Bucur 1961; Turenschi 1964; Bucur 1966; Bucur 1967; Csuros 1968; Răvăruț 1968; Mihai 1969; Turenschi 1970;		Eutrophic, Mesotrophic, Hygrophilous (Ciocârlan 1988, 1990)			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Mititelu 1971b ; Dobrescu 1973; Pătraşcu 1973; Mititelu 1975b; Doltu 1979; Sârbu 2001; *Nasturtium kerneri* Menyh. – Prodan 1922					
R. austriaca (Crantz) Besser	Prodan 1956; Bucur 1957a; Samoilă 1957; Bucur 1961; Şerbănescu 1965; Bucur 1967; Răvăruț 1968; Mihai 1977; Ştefan 1995b; Pop 2000	H Per.	Neohalophyte (Bucur 1961); Hygrophilous (Ciocârlan 1988, 1990)	Wet places, riversides (Ciocârlan 1988, 1990)	1. 35, 89, 347 2. 45, 70, 620	
R. palustris (L.) Besser	*R. islandica* (Oed.) – Flora III	TH-Ht Ann. – Bienn.	Hygrophilous (Ciocârlan 1988, 1990)	Wet places (Ciocârlan 1988, 1990)		
R. amphibia (L.) Besser	Guşuleac 1933; Popescu 1981; Ştefan 1995b; Pop 2000; Sârbu 2000; Ştefan 2001b;	HD Per.	Hygrophilous (Ciocârlan 1988, 1990)	Wet meadows, riversides (Ciocârlan 1988, 1990)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Ştefan 2006					
Cardamine parviflora **L.**	Ciocârlan 2000	Ht Bienn.		Watersides, sometimes salinized places (Ciocârlan 1988, 1990)		
Alyssum alyssoides **L.**	Bucur 1957a; Bucur 1961; Csuros 1961; *A. calycinum* L. – Bucur 1957a, b; Şerbănescu 1965	TH-Ht Ann.	Neohalophyte (Bucur 1961); Oligotrophic, Xerophilous – Xeromesophilous (Ciocârlan 1988, 1990)		1. 25, 75, 115 2. 55, 80, 545	
A. desertorum Stapf	Şerbănescu 1965; Bucur 1966; Răvăruț 1968; Mititelu 1969	TH Ann.	Xerophilous – Xeromesophilous (Ciocârlan 1988, 1990)			
Berteroa incana **(L.) DC.**	Isăcescu 1939; Bucur 1957a; Şerbănescu 1965	TH-Ht Bienn.	Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990		1. 35, 40, 78 2. 35, 60, 92	
Draba muralis **L.**	Prodan 1922; Prodan 1939	TH-Ht Ann.	III categ. (Prodan 1939); Xeromesophilous – Mesophilous,			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
			Subtermophilic (Ciocârlan 1988, 1990)			
***Erophilla verna* (L.) Chevall.**	Prodan 1922; Prodan 1939; Popescu 1957 b; Pop 2000; *Draba verna* L. – Bujorean 1961; Andrei 1965; Şerbănescu 1965; Sanda 1978	TH Ann.	III categ. (Prodan 1939); Oligotrophic – Mesotrophic, Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)			
***Camelina microcarpa* Andrz. ex DC.**	Bucur 1957a	TH-Ht. Ann.			1. 55, , 160 2. 35, , 300	
***Capsella bursa-pastoris* (L.) Medik.**	Bucur 1957a; Bucur 1957a, b; Pall 1964; Şerbănescu 1965; Bucur 1967; Rusu 1972; Dobrescu 1973; Pătraşcu 1973; Sanda 1978; Pop 2000	TH-Ht Ann, Bienn.	Eutrophic – Mesotrophic (Ciocârlan 1988, 1990)		1. 45, 90, 390 2. 55, 95, 1650	
***Thlaspi arvense* L.**	Bucur 1957a,b; Buia 1959;	TH-Ht Ann.	Eutrophic, Xeromesophilous –		1. 35, 80, 270 2. 25, 60, 540	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Şerbănescu 1965		Mesophilous (Ciocârlan 1988, 1990)			
***Hymenolobus procumbens* (L.) Nutt. ex Torr. et Gray**	Ciocârlan 2000; *Capsella procumbens* (L.) Fr. – Prodan 1922; Prodan 1939; Ciocârlan 1994; *Hutchinsia procumbens* (L.) Desv. - Sanda 1984; Ştefan 1995b;	TH Ann.	I categ. (Prodan 1939)	Salinized meadows, sandy soils (Ciocârlan 1988, 1990)		
***Lepidium crassifolium* Waldst. et Kit.** (Fig. 70)	Brandza 1879-1883; Grecescu 1898; Prodan 1922; Papp 1939; Prodan 1939; Răvăruţ 1941; Ţopa 1954; Mititelu 1965; Şerbănescu 1965; Ivan 1978; Doltu 1979; Sanda 1984; Sanda 1990b; Pop 2000 *Lepidium*	H Per.	I categ. (Prodan 1939); Obligatory Halophyte (Ţopa 1954); Euhalophyte (Bucur 1960a); Mesophilous – Mesohygrophilous, Obligatory Halophyte (Ciocârlan 1988, 1990)	Wet, salinized meadows (Ciocârlan 1988, 1990); Perennial, mesophilous to hygrophilous, mesothermophile to megathermophilic, heliophilous, strongly	1. 135, 320, 465 2. 150, 870, 1100	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	crassifolium (Waldst. & Kit.) Thell. – Țopa 1939; Răvăruț 1948; Mititelu 1987; Ciocârlan 1994; Ciocârlan 2000; Sârbu 2001; *Lepidium cartilagineum* (J. C. Mayer) Thell. – Sch. Cent. XIX-XXI 1949; Flora III; Bucur 1960a; Căzăceanu 1959; Mititelu 1967; Răvăruț 1968; Mititelu 1971a; Pătraşcu 1973; Mititelu 1975; Sanda 1978; Popescu 1984; Pop 2000			alkaliphilous. It develops on salinized wet meadow soils, which dry on surface durring the summer (Bucur 1960a). Species with deep penetrating rhizome (Grigore and Toma 2008; Grigore and Toma 2010b) and root, vegetating in patches or belts (following the water table). This species is a rare Romanian halophyte, and is the most halophylous among all the		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
				Lepidium species. It develops mainly in wet salinized soils, yet on their depth (Grigore pers. obs.). Sometimes these soils could be flooded, and dried, as well, durring the drought seasons.		
L. perfoliatum L. (Fig. 71)	Prodan 1922; Prodan 1939; Isăcescu 1939; Răvăruț 1941; Flora III; Prodan 1956; Bucur 1957a; Popescu 1957 b; Samoilă 1957; Bujorean 1961; Şerbănescu 1965; Bucur 1967; Dobrescu 1973;	TH-Ht Ann.-Biann.	III categ. (Prodan 1939); Facultative halophyte (Ciocârlan 1988, 1990)	Ruderalized, less salinized meadows (Ciocârlan 1988, 1990)	1. 60, 80, 330 2. 5, 90, 970	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Mititelu 1975b; Mititelu 1987; Sanda 1990b; Coste 1993; Ciocârlan 1994; Ciocârlan 2000; Pop 2000; *L. perfoliatum* L. f. *ramosissima* O. Kuntze – Todor 1948					
L. latifolium L. (Fig. 72)	Grecescu 1898; Pax 1919; Prodan 1922; Prodan 1939; Țopa 1939; Răvăruț 1941; Țopa 1954; Flora III; Bucur 1960a; Şerbănescu 1965; Bucur 1967; Răvăruț 1968; Dobrescu 1969; Mihai 1969; Mititelu 1972; Rusu 1972; Pătraşcu 1973; Mititelu	H Per.	I categ. (Prodan 1939); Preferential Halophyte (Țopa 1954); Euhalophyte (Bucur 1960a); Mesohalophyte – Hygrohalophyte (Ciocârlan 1988, 1990)	Wet, salinized meadows (Ciocârlan 1988, 1990); Perennial, mesophilous to hygrophilous, mesothermophile, heliophilous, weakly alkaliphilous, weakly to moderately euhalophilous. It	1. 80, 160, 380 2. 105, 240, 570	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1975b; Mititelu 1978-1980; Mititelu 1987; Ciocârlan 1994; Ştefan 1995b; Burac 1997; Ciocârlan 2000; Pop 2000; Sârbu 2000; Sârbu 2001; Ştefan 2001b; *L. latifolium* L. ssp. *eu-latifolium* Thell. – Țopa 1939			develops on alluvial soils, weakly or moderately salinized, in water meadows and slopes. Indicates alluvial soils, less salinized (Bucur 1960a). Rhizomatous plant (Grigore and Toma 2008; Grigore and Toma 2010b), perhaps the less halophylous from all *Lepidium* species. Our observations suggest that it is a ruderal halophylous		

Species	**Authors with cited species/Synonyms**	**Life form**	**Halophyte type/ecological type**	**Habitat / Ecological spectrum**	**Salinity tolerance** **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	**Others**
				species preferring mainly the borders of salinized areas; we never found it towards the center of a saline habitat, where the salinization is more intense (Grigore pers. obs.)		
L. ruderale L. (Fig. 73)	Prodan 1922; Prodan 1939; Țopa 1939; Todor 1948; Țopa 1954; Prodan 1956; Flora III; Bucur 1957a; Samoilă 1957; Buia 1959; Pop 1959; Samoilă 1960; Bucur 1961; Bujorean 1961; Csuros 1961; Andrei 1962;	Th-Ht Ann. – Bienn.	II categ. (Prodan 1939); Supporting Halophyte (Țopa 1954, Andrei 1965); Neohalophyte (Bucur 1961); Xeromesophilous – Mesophilous, Facultative halophyte (Ciocârlan 1988, 1990)	Ruderal places, less salinized (Ciocârlan 1988, 1990)	1. 55, 90, 1400 2. 55, 80 (340), 2480	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Popescu 1963; Pall 1964; Turenschi 1964; Andrei 1965; Şerbănescu 1965; Popescu-Domogled 1966; Răvăruț 1968; Mihai 1969; Țopa 1969; Turenschi 1970; Mititelu 1971a; Mihai 1972; Mititelu 1972; Rusu 1972; Dobrescu 1973; Pătraşcu 1973; Popescu 1976; Sanda 1978; Doltu 1979; Mititelu 1978-1980; Popescu 1981; Popescu 1984; Sanda 1984; Mititelu 1987; Popescu 1987; Sanda 1991; Coste 1993; Ciocârlan					

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	Others
	1994; Ştefan 1995b; Burac 1997; Ciocârlan 2000; Pop 2000					
L. campestre (L.) R. Br.	Bucur 1957a; Bucur 1961; Bucur 1966; Mititelu 1972; Sanda 1978	TH-Ht Ann. – Bienn.	Neohalophyte (Bucur 1961); Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)		1. 32, 45, 1220 2. 25, 70, 1430	
***Cardaria draba* (L.) Desv.**	Sanda 1984; Sanda 1991; Coste 1993; Pop 2000; *Lepidium draba* L. – Prodan 1922; Prodan 1939; Isăcescu 1939; Bucur 1957a, b; Samoilă 1957; Bucur 1961; Andrei 1962; Şerbănescu 1965; Bucur 1967; Mititelu 1969; Mihai 1972; Pop 1980; Popescu 1984	H Per.	III categ. (Prodan 1939); Neohalophyte (Bucur 1961); Xeromesophilous, Eutrophic, Subtermophilic (Ciocârlan 1988, 1990)		1. 35, 85, 430 2. 45, 110, 2060	
Coronopus	Mititelu 1987;	Th-Ht	II categ. (Prodan	Ruderalized,	1. 60, , 75	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
***squamatus* (Forssk.) Asch.**	Ciocârlan 2000; Sârbu 2001; *Senebiera coronopus* (L.) Poir. – Grecescu 1898; Prodan 1922; Prodan 1939; *Coronopus procumbens* Gilib. – Bucur 1957a; Răvăruț 1968	Ann.-Bienn.	1939); Mesophilous – Mesohygrophilous, Facultative halophyte (Ciocârlan 1988, 1990)	more or less wet, salinized meadows (Ciocârlan 1988, 1990)	2. 60, , 75	
***Diplotaxis muralis* (L.) DC.**	Bucur 1957a, b; Rusu 1972; Dobrescu 1973; Sanda 1984	Th-Ht Ann. – Bienn.				
***Brassica rapa* L.**	*Brassica campestris* L. – Şerbănescu 1965	Th-Ht Ann., Biann.				
***Sinapis arvensis* L.**	Bucur 1957a, b	TH Ann.	Mesophilous – Xeromesophilous, eurytermophile (Ciocârlan 1988, 1990)		1. 15, 80, 185 2. 40, 130, 700	
***Eruca sativa* Mill.**	Şerbănescu 1965	TH Ann.				

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
***Cakile maritima* Scop. ssp. *euxina* (Pobed.) Nyár.** (Fig. 74)	Ciocârlan 2000; Pop 2000; *C. maritima* Scop. – Prodan 1922; Prodan 1937; Prodan 1939; Țopa 1954; Morariu 1967; Pop 1969b; Popescu 1976; Doltu 1979; Doltu 1983; Sanda 1990b; Sârbu 1995b; Ciocârlan 1999; Ştefan 2001a	TH Ann.	I categ. (Prodan 1939); Preferential Halophyte (Țopa 1954)	Salinized maritime sands (Ciocârlan 1988, 1990)		
***Crambe maritima* L.** (Fig. 75)	Prodan 1922; Prodan 1939; Doltu 1979; Ciocârlan1994; *C. maritima* L. var. *pontica* (Stev.) O. E. Schulz – Doltu 1983	H Per.	I categ. (Prodan 1939)	Maritime sands (Ciocârlan 1988, 1990)		
			Resedaceae			
***Reseda lutea* L.**	Bucur 1957a	Ht-TH Per.	Xeromesophilous – Subtermophilic (Ciocârlan 1988,		1. 25, 55, 60 2. 55, 60, 110	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
			1990)			
Salicaceae						
Salix alba **L.**	Prodan 1939	Ph	III categ. (Prodan 1939); Eutrophic – Mesotrophic, Hygrophilous (Ciocârlan 1988, 1990)	Riversides, wet habitats (Ciocârlan 1988, 1990)		
S. viminalis L.	Prodan 1939	Ph	III categ. (Prodan 1939); Eutrophic – Mesotrophic, Hygrophilous (Ciocârlan 1988, 1990)			
S. triandra L.	Prodan 1939	Ph	Eutrophic – Mesotrophic, Hygrophilous (Ciocârlan 1988, 1990			
S. rosmarinifolia L.	*S. rosmarinifolia* f. *latifolia* – Țopa 1969	Ph	Eurytrophe, Mesohygrophilous – Hygrophilous (Ciocârlan 1988, 1990)			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
			Primulaceae			
***Lysimachia nummularia* L.**	Bucur 1957a; Pop 1959; Bucur 1961; Csuros-Kaptalan 1965; Şerbănescu 1965; Boşcaiu 1966; Rusu 1972; Dobrescu 1973; Mititelu 1978-1980; Mititelu 1987; Sanda 1991; Pop 2000; Ştefan 2002	Ch Per.	Neohalophyte (Bucur 1961); Mesohygrophilous (Ciocârlan 1988, 1990)	Wet meadows (Ciocârlan 1988, 1990)	1. 45, 90, 175 2. 50, 90, 170	
L. vulgaris L.	Grigore 1978; Samú 1982; Ştefan 2006	Per.	Hygrophilous (Ciocârlan 1988, 1990)	Riversides, marshy meadows (Ciocârlan 1988, 1990)		
***Glaux maritima* L.** (Fig. 76)	Fuss 1866; Schur 1885; Bujorean 1934; Prodan 1939; Ţopa 1954; Flora VII; Sanda 1973; Ciocârlan 2000; Pop 2000	H Per.	I categ. (Prodan 1939); Obligatory Halophyte (Ţopa 1954); Mesohalophyte – Hygrohalophyte (Ciocârlan 1988, 1990)	Wet, salinized meadows (Ciocârlan 1988, 1990)		Salt glands at the level of laminas (Grigore and Toma, 2010c; Grigore, unpublished data)
Anagallis	Bucur 1957a; Rusu	TH-Ht	Mesophilous,		1. 30, , 60	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
arvensis **L.**	1972; Sârbu 2001	Ann.	Mesotrophic (Ciocârlan 1988, 1990)		2. 45, , 100	
Samolus valerandi **L.** (Fig. 77)	Schur 1885; Brandza 1898; Grecescu 1898; Prodan 1922; Flora VII; Popescu 1973; Popescu 1976; Sanda 1990a; Ciocârlan 1994; Ştefan 1995b; Ciocârlan 2000; Pop 2000; Sârbu 2000; Sârbu 2001; Ştefan 2001b; Ştefan 2006	H Per.	Mesohygrophilous – Hygrophilous (Ciocârlan 1988, 1990)	Wet depressions, often in salinized habitats (Ciocârlan 1988, 1990)		
Gentianaceae						
Blackstonia acuminata **(W. D. J. Koch et Ziz) Domin**	Ciocârlan 1994; Ciocârlan 2000, 2009	TH Ann.		Wet alluvial sandy soils (Ciocârlan 1988, 1990)		
Centaurium spicatum **(L.) Fritsch**	Flora VIII; Popescu 1973; Popescu 1975;	TH-Ht Ann.-Bienn.		Wet salinized meadows (Ciocârlan 1988,		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Sanda 1990b; Sanda 1991; Ciocârlan 1994; Ciocârlan 2000; Pop 2000; Sârbu 2001			1990)		
C. pulchellum (Sw.) Druce (Fig. 78)	Prodan 1922; Prodan 1939; Todor 1948; Țopa 1954; Prodan 1956; Bucur 1957a; Flora VIII; Andrei 1965; Csuros-Kaptalan 1965; Șerbănescu 1965; Țopa 1969; Popescu 1971; Rusu 1972; Sanda 1973; Popescu 1976; Pop 1980; Popescu 1981; Pop 1983; Sanda 1984; Mititelu 1987; Ciocârlan 1994; Ciocârlan 2000; Pop 2000; Sârbu	TH Ht, Ann.	II categ. (Prodan 1939); Supporting Halophyte (Țopa 1954, Andrei 1965); Mesophilous – Mesohygrophilous (Ciocârlan 1988, 1990)	Wet, sometimes salinized meadows (Ciocârlan 1988, 1990)	1. 155, , 425 2. 145, ,635	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	2001; Ştefan 2001a; *Erythraea pulchella* (Sw.) Fr. – Fuss 1866					
C. erythraea Raf.	Pop 2000; *C. umbellatum* auct. – Csuros-Kaptalan 1965; Rusu 1972; Samú 1982; *C. turcicum* (Vellen) Ronniger. – Prodan 1922; Prodan 1939	TH-Ht Ann. – Bienn.	II categ. (Prodan 1939); Mesophilous (Ciocârlan 1988, 1990)			
C. littorale (Turner) Gilmour ssp. *uliginosum* (Waldst. et Kit.) Melderis	Ciocârlan 2000; *C. uliginosum* (Waldst. & Kit.) Beck ex Ronniger – Prodan 1939; Flora VIII; Sârbu 2001	TH-Ht Ann.-Bienn.	II categ. (Prodan 1939)	Wet salinized meadows (Ciocârlan 1988, 1990)		
Apocynaceae						
***Trachomitum venetum* (L.) Woodson**	Ciocârlan 1994					
Asclepiadaceae						
***Cynanchum acutum* L.**	Flora VIII; Andrei 1965; Sârbu 1995a;	H Per.	Xerophilous – Xeromesophilous,			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Pop 2000; Sârbu 2000		Termophile (Ciocârlan 1988, 1990)			
Solanaceae						
***Solanum nigrum* L.**	Sanda 1984	TH Ann.	Mesophilous (Ciocârlan 1988, 1990)			
S. dulcamara L.	Sârbu 2000; Ştefan 2006	Ch Per.	Mesohygrophilous – Hygrophilous (Ciocârlan 1988, 1990)			
***Hyosciamus níger* L.**	Bucur 1957a	Ht Bienn.	Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)		1. 70, 80, 105 2. 90, 200, 490	
Convolvulaceae						
***Calystegia sepium* (L.) R. Br.**	Bucur 1957a	G (H)	Eutrophic, Mesohygrophilous – Hygrophilous (Ciocârlan 1988, 1990)	Wet places, marshes (Ciocârlan 1988, 1990)	1. , , 375 2. , , 435	
***Convolvulus arvensis* L.**	Bucur 1957a; Samoilă 1960; Şerbănescu 1965; Mititelu 1972;	G (H) Per.	Mesophilous, Mesothermophilic, Eutrophic – Mesotrophic		1. 20, 60, 535 2. 20, 100, 1700	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Sanda 1984; Sanda 1992; Burac 1997		(Ciocârlan 1988, 1990)			
			Boraginaceae			
***Argusia sibirica* (L.) Dandy**	*Tournefortia sibirica* L. – Prodan 1939; Popescu 1976; Doltu 1979; Doltu 1983; *T. arguzia* - Prodan 1937	H Per.	I categ. (Prodan 1939)	Maritime sands (Ciocârlan 1988, 1990)		
***Heliotropium curassavicum* L.**	Flora VII; Ciocârlan 1994; Ciocârlan 2000	H Per.		Wet, salty sands (Ciocârlan 1988, 1990)		
H. europeum L.	Şerbănescu 1965; Sanda 1984	TH Ann.	Xeromesophilous, Mesothermophilic – Subtermophilic (Ciocârlan 1988, 1990)			
H. supinum L.	Popescu 1963; Şerbănescu 1965; Ciocârlan 2000; Sârbu 2001	TH Ann.	Mesohygrophilous, Subtermophilic (Ciocârlan 1988, 1990)	Alluvial soils, sometimes more or less salinized (Ciocârlan 1988, 1990)		
Echium vulgare	Bucur 1957a; Rusu	Ht	Mesothermophilic –		1. 75, 100, 135	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
L.	1972	Bienn.	Subtermophilic, Xeromesophilous (Ciocârlan 1988, 1990)		2. 60, 75, 275	
***Myosotis laxa* Lexm.**	*Myosotis caespitosa* Schultz. – Prodan 1922; Prodan 1939	TH-Ht Ann. – Bienn.	III categ. (Prodan 1939); Hygrophilous (Ciocârlan 1988, 1990)	Marshes (Ciocârlan 1988, 1990)		
M. scorpioides L.	Mititelu 1987; Ştefan 1995b; Sârbu 2000; Ştefan 2001b; Ştefan 2006; *M. palustris* (L.) Hill – Şerbănescu 1965; Grigore 1978	H Per.	Hygrophilous (Ciocârlan 1988, 1990)	Wet meadows, marshes (Ciocârlan 1988, 1990)		
M. stricta Link ex Roem. Et Schult.	Pop 2000	TH Ann.	Xerophilous – Xeromesophilous (Ciocârlan 1988, 1990)	Dry, sandy places (Ciocârlan 1988, 1990)		
M. arvensis Hill.	Mihai 1972; Rusu 1972	Ht Bienn.				
***Nonea pulla* (L.) DC.**	Bucur 1957a; Rusu 1972	Ht, H Biann – Per.	Xerophilous – Xeromesophilous, Subtermophilic		1. 45, , 78 2. 50, , 75	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
			(Ciocârlan 1988, 1990)			
***Symphytum officinale* L.**	Csuros 1947; Prodan 1956; Bucur 1957a; Samoilă 1957; Popescu 1963; Csuros-Kaptalan 1965; Grigore 1978; Samú 1982; Mititelu 1987; Ştefan 2001b; *S. officinale* var. *lanceolatum* Weimn – Guşuleac 1933	H Per.	Mesohygrophilous – Hygrophilous (Ciocârlan 1988, 1990)	Wet meadows, eatersides (Ciocârlan 1988, 1990)	1. 50, , 485 2. 50, , 150	
***Anchusa ochroleuca* M. Bieb.**	Bucur 1957a	H Per.	Xerophilous – Xeromesophilous, Subtermophilic (Ciocârlan 1988, 1990)		1. , 65, 2. , 75,	
A. officinalis L.	Rusu 1972	H (Ht) Per. Bienn.	Xerophilous – Xeromesophilous (Ciocârlan 1988, 1990)			
***Rochellia disperma* (L.**	*Cervia disperma* (L. F.) Hayek –	TH Ann.				

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	Others
Fil.) K. Koch.	Şerbănescu 1965					
***Lappula squarrosa* (Retz.) Dumort.**	Pop 2000; *Lappula myosotis* Moench – Bucur 1957a, b; *L. echinata* Fritsch. – Bucur 1967; Rusu 1972; Sanda 1984	TH-Ht Ann.-Bienn.	Xeromesophilous, Mesothermophilic (Ciocârlan 1988, 1990)		1. 30, 90, 570 2. 35, 75, 1270	
L. patula (Lehm.) Gürcke	Şerbănescu 1965	TH Ann.	Xerophilous, Subtermophilic (Ciocârlan 1988, 1990)			
***Cerinthe minor* L.**	Bucur 1957a		Xeromesophilous, Subtermophilic (Ciocârlan 1988, 1990)		1. 45, 65, 80 2. 65, 80, 435	
***? Lithospermum cristatum* (L.) R. Et Sch**	Isăcescu 1939					
L. arvense L.	Rusu 1972	TH Ann.				
L. officinale L	Rusu 1972	H Per.	Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)			
Lycopsis	*Lycopsis orientalis*	Th-Ht	III categ. (Prodan			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	Others
***arvensis* L. ssp. *orientalis* (L) Kuntze**	L. – Prodan 1939	Ann.	1939)			
***Cynoglossum officinale* L.**	Bucur 1957a, b	Ht Bienn.	Xeromesophilous (Ciocârlan 1988, 1990)		1. 45, 65, 75 2. 85, 75, 290	
***Asperugo procumbens* L.**	Şerbănescu 1965					
			Verbenaceae			
***Verbena officinalis* L**	Prodan 1956; Bucur 1957a; Samoilă 1957; Şerbănescu 1965; Mititelu 1972; Pătraşcu 1973; Sanda 1984; Mititelu 1987	H Per.	Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)		1. , 45, 2. , 60,	
V. supina L.	Prodan 1939; Flora VIII; Doltu 1979; Ciocârlan 2000	TH Ann.	II categ. (Prodan 1939); Mesohygrophilous halophyte (Ciocârlan 1988, 1990)	Wet, more or less salinized habitats (Ciocârlan 1988, 1990)		
			Lamiaceae			
***Ajuga genevensis* L.**	Şerbănescu 1965; Pop 2000	H Per.	Mesophilous (Ciocârlan 1988,			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
			1990)			
***Teucrium chamaedrys* L.**	Bucur 1957a	Ch	Xerophilous – Xeromesophilous (Ciocârlan 1988, 1990)			
T. polium L.	Bucur 1957a	Ch	Xerophilous, Subtermophilic (Ciocârlan 1988, 1990)		1. , , 105 2. , , 165	
T. scordium L.	Pax 1919; Țopa 1954; Prodan 1956; *Teucrium scordioides* Schreb. – Grecescu 1898; Prodan 1922; Prodan 1939; *Teucrium scordium* L. – Țopa 1954; Bucur 1957a; Pop 1959; Popescu 1976; Sanda 1991; Pop 2000	H Per.	I categ. (Prodan 1939); Accidental Halophyte (Țopa 1954); Hygrophilous (Ciocârlan 1988, 1990)	Marshy meadows, watersides (Ciocârlan 1988, 1990)	1. , , 371 2. , , 219	
***Scutellaria hastifolia* L.**	Bucur 1957a; Popescu 1957; Şerbănescu 1965;	Per.	Mesohygrophylous (Ciocârlan 1988, 1990)	Marshy meadows (Ciocârlan 1988,	1. , 55, 2. , 55,	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Burac 1997			1990)		
S. galericulata L	Ştefan 2006	H Per.	Hygrophilous (Ciocârlan 1988, 1990)	Watersides, marshy meadows (Ciocârlan 1988, 1990)		
***Marrubium peregrinum* L.**	Bucur 1957a ; Popescu 1963; Morariu 1967	H Per.	Xeromesophilous, Subtermophilic (Ciocârlan 1988, 1990)		1. , 30, 2. , 45,	
M. vulgare L	Şerbănescu 1965; Sanda 1978; Sanda 1984	H Per.	Xeromesophilous (Ciocârlan 1988, 1990)			
***Sideritis montana* L.**	Bucur 1957a	TH Ann				
***Glechoma hederacea* L.**	Bucur 1957a	H (Ch) Per.	Mesophilous – Mesohygrophilous (Ciocârlan 1988, 1990)	Wet places (Ciocârlan 1988, 1990)	1. , 30, 2. , 50,	
***Prunella vulgaris* L.**	Prodan 1956; Samoilă 1957; Şerbănescu 1965; Boşcaiu 1966; Mihai 1972; Samú 1982	H Per.	Mesophilous – Mesohygrophilous (Ciocârlan 1988, 1990)			
Phlomis	Bucur 1957a	H	Xerophilous		1. 35, 55, 95	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	Others
***pungens* Willd**		Per.	(Ciocârlan 1988, 1990)		2. 60, 80, 165	
P. tuberosa L.	Bucur 1957a	H Per.	Xeromesophilous, Eutrophic (Ciocârlan 1988, 1990)		1. , 35, 2. , 55,	
***Lamium purpureum* L.**	Bucur 1957a	TH Ann.	Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)		1. , 70, 2. , 225,	
***Leonurus marrubiastrum* L.**	Şerbănescu 1965	Ht Bienn.	Mesophilous – Mesohygrophilous (Ciocârlan 1988, 1990)			
***Galeopsis ladanum* L.**	Bucur 1957a	TH Ann.	Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)		1. , 40, 2. , 40,	
G. tetrahit L.	Rusu 1972	TH Ann.	Mesophilous (Ciocârlan 1988, 1990)			
***Stachys officinalis* (L.) Trevis**	Ştefan 1995b; *Betonica officinalis* L. – Bucur 1957a; Mihai 1972; Samú	H Per.	Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1982					
S. palustris L.	Bucur 1957a; Grigore 1978; Sârbu 2000; Ştefan 2001b; Ştefan 2006	H Per.	Hygrophilous (Ciocârlan 1988, 1990)	Marshy meadows, watersides, alluvial soils (Ciocârlan 1988, 1990)	1. 85, 120, 190 2. 70, 120, 160	
S. annua L.	Bucur 1957a, b	TH Ann.	Xeromesophilous (Ciocârlan 1988, 1990)		1. 10, 45, 95 2. 20, 50, 225	
S. recta L.	Rusu 1972	H Per.	Xerophilous (Ciocârlan 1988, 1990)			
***Salvia nemorosa* L.**	Prodan 1956; Bucur 1957a, b; Csuros-Kaptalan 1965; Şerbănescu 1965; Răvăruț 1968; Sanda 1978; Mititelu 1987	H Per.	Xerophilous – Xeromesophilous (Ciocârlan 1988, 1990)		1. 20, 80, 250 2. 30, 80, 960	
S. aethiopis L.	Bucur 1957a	Ht-TH Bienn. – Per.	Xerophilous – Xeromesophilous Subtermophilic (Ciocârlan 1988, 1990)		1. , 55, 2. , 75,	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
***Thymus serpyllum* L.**	Csuros 1947	Ch. Per.	Oligotrophic, Calciphobous (Ciocârlan 1988, 1990)			
***Lycopus europaeus* L.**	Bujorean 1934; Csuros-Kaptalan 1965; Şerbănescu 1965; Boşcaiu 1966; Mihai 1969; Mihai 1972; Popescu 1976; Samú 1982; Mititelu 1987; Ştefan 1995b; Sârbu 2000	H Per.	Hygrophilous (Ciocârlan 1988, 1990)	Marshes, watersides (Ciocârlan 1988, 1990)		
***Mentha aquatica* L.**	Prodan 1939; Bucur 1957a; Nedelcu 1973; Popescu 1981; Sârbu 1995a; Ştefan 1995b; Sârbu 2000; Ştefan 2001b; Ştefan 2006	H Per.	III categ. (Prodan 1939); Hygrophilous (Ciocârlan 1988, 1990)	Marshy meadows (Ciocârlan 1988, 1990)	1. , , 190 2. , , 260	
M. x dumetorum Schult.	*M. dumetorum* – Prodan 1939		III categ. (Prodan 1939)			
Mentha pulegium	Prodan 1922;	H	II categ. (Prodan	Wet habitats	1. 45, , 90	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
L.	Prodan 1923; Prodan 1939; Țopa 1954; Prodan 1956; Bucur 1957a; Popescu 1957; Samoilă 1957; Pop 1959; Samoilă 1960; Boşcaiu 1966; Csuros 1968; Țopa 1969; Mititelu 1971b ; Rusu 1972; Doltu 1979; Mititelu 1987; Sanda 1991; Coste 1993; Ştefan 1995b; Pop 2000; Ştefan 2002; Ştefan 2006	Per.	1939); Supporting Halophyte (Țopa 1954); Mesohygrophilous (Ciocârlan 1988, 1990)	(Ciocârlan 1988, 1990)	2. 55, , 175	
M. x verticillata L.	Prodan 1956; Popescu 1976					
Callitrichaceae						
***Callitriche cophocarpa* Sendtn.**	*Callitriche polymorpha* Lönnr. – Sanda 1991	TH-H Ann. – Per.	Hygrophilous – hydrophilous (Ciocârlan 1988,	Stagnant or less flowing waters (Ciocârlan 1988,		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
			1990)	1990)		
			Plantaginaceae			
***Plantago coronopus* L.** (Fig. 79)	Flora VIII; Popescu 1976; Sanda 1973; Doltu 1979; Doltu 1983; Sanda 1990a; Sanda 1990b; Sanda 1992; Ciocârlan 1994; Ciocârlan 2000; Pop 2000; Sârbu 2001; Sârbu 2003	TH-Ht Ann.-Bienn.		Maritime, salinized sands (Ciocârlan 1988, 1990)		
P. maritima L. (Fig. 80)	Hacquet 1790-96; Fuss 1866; Brandza 1879-1883; Schur 1885; Grecescu 1898; Pax 1919; Prodan 1922; Prodan 1923; Bujorean 1934; Sch. Cent. XII-XIV 1934; Prodan 1937; Isăcescu 1939; Prodan 1939; Csuros 1947; Țopa	H Per.	I categ. (Prodan 1939); Obligatory Halophyte (Țopa 1954); Mesohalophyte (Ciocârlan 1988, 1990)	More or less wet, salinized habitats (Ciocârlan 1988, 1990)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1954; Prodan 1956; Popescu 1957; Samoilă 1957; Pop 1959; Flora VIII; Samoilă 1960; Csuros 1961; Borza 1964; Pall 1964; Csuros-Kaptalan 1965; Şerbănescu 1965; Țopa 1969; Csuros 1970; Mititelu 1971a; Pătraşcu 1973; Popescu 1973; Sanda 1973; Mititelu 1975b; Popescu 1975; Popescu 1976; Sanda 1978; Doltu 1979; Sanda 1979; Samú 1982; Doltu 1983; Popescu 1984; Sanda 1990a; Sanda 1990b; Sanda 1991; Coste					

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1993; Ciocârlan 2000; Pop 2000; Sârbu 2001; Ştefan 2001a; *P. maritima* L. f. *maritima* – Doltu 1984)					
P. lanceolata L.	Prodan 1922; Prodan 1923; Guşuleac 1933; Prodan 1939; Csuros 1947; Țopa 1954; Prodan 1956; Bucur 1957a, b; Popescu 1957; Samoilă 1957; Pop 1959; Samoilă 1960; Bucur 1961; Andrei 1965; Şerbănescu 1965; Bucur 1966; Boşcaiu 1966; Bucur 1967; Răvăruț 1968; Mihai 1969; Mititelu 1971a;	H Per.	III categ. (Prodan 1939); Supporting Halophyte (Țopa 1954, Andrei 1965); Neohalophyte (Bucur 1961); Eurytrophe (Ciocârlan 1988, 1990)		1. 20, 80, 370 2. 15, 70, 870	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Mihai 1972; Pătraşcu 1973; Sanda 1973; Popescu 1975; Ivan 1978; Sanda 1978; Pop 1980; Samú 1982; Pop 1983; Popescu 1984; Sanda 1984; Mititelu 1987; Sanda 1991; Coste 1993; Pop 2000; Sârbu 2000; *P. lanceolata* L. var. *sphaerostachya* Mert. & W. D. J. Koch. – Csuros 1947; *P. lanceolata* L. var. *communis* Schlecht – Todor 1948					
P. altissima L.	Şerbănescu 1965	H Per.	Mesophilous – Mesohygrophilous (Ciocârlan 1988, 1990)	More or less wet habitats (Ciocârlan 1988, 1990)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
P. tenuiflora Waldst. et Kit. (Fig. 81)	Schur 1885; Grecescu 1898; Pax 1919; Prodan 1922; Prodan 1923; Isăcescu 1939; Prodan 1939; Țopa 1939; Răvăruț 1941; Țopa 1954; Prodan 1956; Popescu 1957a, b; Samoilă 1957; Pop 1959; Bucur 1960a; Bujorean 1961; Flora VIII; Popescu 1963; Turenschi 1964; Andrei 1965; Mititelu 1965; Şerbănescu 1965; Borza 1966; Mihai 1969; Mititelu 1969; Țopa 1969; Turenschi 1970; Mititelu 1971a; Mihai 1972; Pătraşcu 1973;	TH Ann.	I categ. (Prodan 1939); Obligatory Halophyte (Țopa 1954); Euhalophyte (Bucur 1960a); Mesohalophyte (Ciocârlan 1988, 1990)	Wet salinized meadows (Ciocârlan 1988, 1990); Annual plant, common, mesophilous to xerophilous, mesothermophile heliophilous, strictly alkaliphilous, less or moderately euhalophyte; a species with small tap root, with slightly succulent leaves, indicating a salinized areas that could be cultivated (Bucur, 1960a).	1. 71, 100, 265 2. 115, 130,1640	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Sanda 1978; Doltu 1979; Doltu 1983; Doltu 1984; Popescu 1984; Antohe 1986; Mititelu 1987; Sanda 1990b; Sanda 1991; Coste 1993; Ciocârlan 1994; Ciocârlan 2000; Pop 2000; Sârbu 2001; *P. tenuiflora* Waldst. & Kit. f. *densiflora* Răvăruț - Răvăruț 1948					
P. schwarzenbergiana Schur (Fig. 82)	Fuss 1866; Schur 1885; Sch. Cent I 1921; Prodan 1939; Țopa 1939; Răvăruț 1941; Țopa 1954 Prodan 1956; Popescu 1957; Căzăceanu 1959; Bucur 1960a;	H Per.	I categ. (Prodan 1939); Obligatory Halophyte (Țopa 1954); Euhalophyte (Bucur 1960a); Mesohalophyte (Ciocârlan 2000)	Annual plant, common, mesophilous, meothermophile, heliophilous, alkaliphilous; it develops on less or strongly salinized water	1. 95, 110, 515 2. 145, 170,1640	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Bujorean 1961; Flora VIII; Turenschi 1964; Mititelu 1965; Bucur 1966; Popescu-Domogled 1966; Şerbănescu 1965; Răvăruț 1968; Dihoru 1969; Dobrescu 1969; Mihai 1969; Mititelu 1969; Țopa 1969; Turenschi 1970; Mititelu 1971a; Mihai 1972; Pătraşcu 1973; Sanda 1978; Doltu 1979; Pop 1983; Doltu 1984; Mititelu 1987; Sanda 1990a; Sanda 1991; Coste 1993; Ciocârlan 1994; Ciocârlan 2000; Pop 2000;			meadows (Bucur, 1960a). This species is rather a xero-halophyte, with strongly developed underground system (root and rhizome), and with coriaceous leaves; it occurs rather as isolated individuals but the distance among them could be variable; it prefers areas free from other species (Grigore and Toma, 2010 b; Grigore, pers. obs.)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Sârbu 2001; Ştefan 2002; *P. sibirica* auct. Eur., non Poir. – Grecescu1898; Pax 1919; Prodan 1922; Prodan 1923; Papp 1939; *P. schwarzenbergiana*. Schur f. *microphylla* Schur, f. *macrophylla* Schur, f. *pilosula* Schur – Todor 1948					
P. cornuti Gouan (Fig. 83)	Guebhard 1848; Fuss 1866; Brandza 1879-1883; Brandza 1898; Grecescu 1898; Pax 1919; Prodan 1922; Sch. Cent. XII-XIV 1934; Prodan 1939; Răvăruț 1941; Csuros 1947; Todor 1948; Țopa 1954; Bucur 1960a; Flora	H Per.	I categ. (Prodan 1939); Obligatory Halophyte (Țopa 1954); Euhalophyte (Bucur 1960a); Mesohygrohalophilous (Ciocârlan 1988, 1990)	More or less wet, salinized meadows (Ciocârlan 1988, 1990); perennial, hygrophilous, mesothermophile heliophilous yet sciophilous, strictly alkaliphilous, less euhalophytic	1. 85, 160, 275 2. 90, 120, 235	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	VIII; Csuros 1961; Csuros-Kaptalan 1965; Şerbănescu 1965; Răvăruț 1968; Mititelu 1969; Csuros 1970; Turenschi 1970; Mititelu 1975b; Doltu 1979; Mititelu 1978-1980; Pop 1980; Doltu 1983; Doltu 1984; Mititelu 1987; Pop 1988; Sanda 1990a; Sanda 1990b; Sanda 1991; Ciocârlan 1994; Ştefan 1995b; Ciocârlan 2000; Pop 2000; Ştefan 2001a			(Bucur, 1960a).		
P. major L.	Prodan 1922; Prodan 1939; Țopa 1954; Bucur 1957a; Pall 1964; Csuros-	H Per.	III categ. (Prodan 1939); Supporting Halophyte (Țopa 1954)		1. 20, 100, 530 2. 45, 100, 1920	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Kaptalan 1965; Şerbănescu 1965; Răvăruț 1968; Mihai 1969; Pop 1969a; Dobrescu 1973; Popescu 1973; Mihai 1977; Pop 1977; Ivan 1978; Pop 1980; Samú 1982; Popescu 1984; Sanda 1984; Sanda 1991; Sârbu 1995a; Pop 2000; Ştefan 2001b; ssp. *major*, ssp. *winteri* (Wirtger) W. Ludwig – Ciocârlan 1994; Ciocârlan 2000					
P. media L.	Guşuleac 1933; Csuros 1947; Prodan 1956; Bucur 1957a; Buia 1959; Csuros-Kaptalan	H Per.	Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)		1. 65, 85, 160 2. 60, 70, 175	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1965; Rusu 1972; Sanda 1973; Popescu 1976; Popescu 1987; Sanda 1991					
P. scabra Moench	*P. arenaria* Waldst & Kit – Sârbu 2003; *P. indica* - Pop 1969b;	TH Ann.	Xerophilous, Subtermophilic; Oligotrophic (Ciocârlan 1988, 1990)			
P. uliginosa F. W. Schmidt	Ciocârlan 2000					
			Scrophulariaceae			
***Kickxia spuria* (L.) Dumort**.	Bucur 1957a; Şerbănescu 1965	TH Ann.	Mesophilous (Ciocârlan 1988, 1990)		1. 45, 55, 75 2. 35, 45, 100	
K. elatine (L.) Dumort	Şerbănescu 1965; Popescu 1981; Sanda 1984	TH Ann.	Mesophilous (Ciocârlan 1988, 1990)			
***Linaria genistifolia* (L.) Mill.**	Prodan 1939	H Per.	II categ. (Prodan 1939); Oligotrophic, Xerophilous – Xeromesophilous, Subtermophilic			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
			(Ciocârlan 1988, 1990)			
L. vulgaris Mill.	Csuros 1947; Prodan 1956; Bucur 1957a; Samoilă 1957; Şerbănescu 1965; Samú 1982;	H Per.			1. 35, 65, 110 2. 20, 70, 330	
***Gratiola officinalis* L**	Țopa 1954; Bucur 1957a; Pop 1959; Bucur 1961; Boşcaiu 1966 Csuros 1968; Țopa 1969; Sanda 1991; Ştefan 1995b; Pop 2000	H Per.	Supporting Halophyte (Țopa 1954); Neohalophyte (Bucur 1961); Mesohygrophilous – Hygrophilous (Ciocârlan 1988, 1990)	Wet places, watersides (Ciocârlan 1988, 1990)	1. 160, 185, 205 2. 70, 80, 95	
***Verbascum blattaria* L.**	Prodan 1922; Guşuleac 1933; Țopa 1954; Bucur 1957a; Samoilă 1957; Flora VII; Mihai 1972; Samú 1982;	Ht Bienn.	Accidental Halophyte (Țopa 1954; Andrei 1965); Xeromesophilous – Mesohygrophilous (Ciocârlan 1988, 1990)		1. 70, 80, 90 2. 80, 90, 90	
V. phoeniceum L.	Csuros 1947; Pop	H	Xeromesophilous,			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	2000	Per.	subtermophilic (Ciocârlan 1988, 1990)			
***Odontites vernus* (Bellardi) Dumort.**	Ciocârlan 1994; Ciocârlan 2000; *O. rubra* (Baumg) Pers. – Prodan 1939; Prodan 1956; Boşcaiu 1966; Ştefan 1995b; Sârbu 2001; Ştefan 2001b; *O. serotina* (Lam.) Rchb. – Buj. 1934; Samú 1982	TH Ann.	II categ. (Prodan 1939); Mesophylous – Mesohygrophilous (Ciocârlan 1988, 1990)	More or less wet places, sometimes in less salinized habitats (Ciocârlan 1988, 1990)		
***Euphrasia stricta* D. Wolff ex J. F. Lehm**	Rusu 1972	TH Ann.				
***Limosella aquatica* L.**	Prodan 1922; Prodan 1939; Ţopa 1954	TH Ann.Per.	III categ. (Prodan 1939); Accidental Halophyte (Ţopa 1954); Mesohygrophilous – Hygrophilous (Ciocârlan 1988, 1990)	Wet habitats, frequently floodes (Ciocârlan 1988, 1990)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
***Lindernia procumbens* (Krock.) Borbás**	*Lyndernia pyxidaria* L. – Prodan 1939	TH Ann.	III categ. (Prodan 1939); Mesohygrophilous – Hygrophilous (Ciocârlan 1988, 1990)	Wet habitats, frequently floodes (Ciocârlan 1988, 1990)		
***Veronica scardica* Griseb**.	Ciocârlan 1972; *Veronica velenovskyi* R. Uechtr. – Sch. Cent. VII 1926; Prodan 1939; Şerbănescu 1965	H Per.	II categ. (Prodan 1939); Neohalophyte (Bucur 1961); Hygrophilous (Ciocârlan 1988, 1990)	Watersides, marshes (Ciocârlan 1988, 1990)		
V. *spicata* L.	Guşuleac 1933; Bucur 1957a, b; Bucur 1961; Csuros-Kaptalan 1965; Samú 1982; Pop 1983; Pop 2000; *V. orchidea* Crantz – Prodan 1923; Prodan 1956; Pop 1980; Pop 2000	H Per.	Xeromesophilous. (Ciocârlan 1988, 1990)		1. 45, 75, 130 2. 25, 200, 970	
V. *acinifolia* L	Şerbănescu 1965; Coste 1993; Sârbu	TH Ann	Mesophilous – Mesohygrophilous,	More or less wet meadows		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	2001		Subtermophilic, Facultative halophyte (Ciocârlan 1988, 1990)	(Ciocârlan 1988, 1990)		
V. polita Fr.	Bucur 1957a, b; Şerbănescu 1965	TH Ann.	Mesophilous (Ciocârlan 1988, 1990)			
V. prostrata L.	Şerbănescu 1965; Pop 2000	Ch Per.	Oligotrophic, Xeromesophilous (Ciocârlan 1988, 1990)			
V. triphyllos L.	Andrei 1965; Şerbănescu 1965	TH Ann.	Xeromesophilous, Calciphobous (Ciocârlan 1988, 1990)			
V. arvensis L.	Prodan 1956; Bucur 1957a ; Samoilă 1957; Pop 1959; Samoilă 1960; Bucur 1961; Şerbănescu 1965; Sanda 1978; Pop 1980; Sanda 1991	TH Ann.	Neohalophyte (Bucur 1961); Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)		1. 20, 110, 170 2. 55, 110, 370	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
V. jacquinii Baumg.	Bucur 1957a; Bucur 1967	Per.	Oligotrophic, Xerophilous – Xeromesophilous (Ciocârlan 1988, 1990)		1. 50, 70, 110 2. 65, 75, 330	
V. agrestis L.	Bucur 1957a	TH Ann.	Mesophilous (Ciocârlan 1988, 1990)		1. 40, 50, 225 2. 55, 65, 270	
V. anagalis – aquatica L.	Bucur 1957a; Bucur 1961; Cristurean 1973; Grigore 1978; Mititelu 1987; Pop 2000; Ştefan 2006; *V. anagallis* auct. – Şerbănescu 1965	H Per.	Neohalophyte (Bucur 1961); Hygrophilous (Ciocârlan 1988, 1990)		1. 100, 180, 805 2. 70, 150, 870	
V. catenata Pennell	*V. aquatica* Bernh., non S. F. Gray – Flora VII	H Per.	Hygrophilous (Ciocârlan 1988, 1990)	Watersides, marshes (Ciocârlan 1988, 1990)		
V. anagalloides Guss.	Pop 2000	TH Ann.	Hygrophilous (Ciocârlan 1988, 1990)	Watersides, marshy meadows (Ciocârlan 1988, 1990)		
V. scutellata L.	Todor 1948; Samú 1982; Sanda 1991;	H Per.	Mesohygrophilous – Hygrophilous	Marshy meadows		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	Others
	Pop 2000		(Ciocârlan 1988, 1990)	(Ciocârlan 1988, 1990)		
V. serpyllifolia L.	Pop 1959; Pop 2000	H Per.	Mesophilous (Ciocârlan 1988, 1990)	Wet habitats (Ciocârlan 1988, 1990)		
V. verna L.	Coste 1993; Pop 2000	TH Ann.	Oligotrophic, Xeromesophilous (Ciocârlan 1988, 1990)			
Melampyrum arvense **L.**	Bucur 1957a	TH Ann.	Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)		1. , , 95 2. , , 115	
Rhinanthus angustifolius **C. C. Gmel.**	*Rhinanthus major* auct., non L. – Prodan 1922; *R. glaber* Lam. – Rusu 1972	TH Ann.	Mesophilous – Mesohygrophilous (Ciocârlan 1988, 1990)			
R. rumelicus Velen.	Bucur 1957a; Şerbănescu 1965	TH Ann.	Mesophilous (Ciocârlan 1988, 1990)		1. 85, 125, 215 2. 80, 130, 180	
R. minor L.	Csuros 1947	TH Ann.	Mesophilous – Mesohygrophilous (Ciocârlan 1988, 1990)			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
			Campanulaceae			
***Campanula bononiensis* L.**	Bucur 1957a	H Per.	Xeromesophilous, Oligotrophic – Mesotrophic (Ciocârlan 1988, 1990)		1. , 70, 2. , 65,	
C. glomerata L.	Guşuleac 1933	H Per.	Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)			
			Orobanchaceae			
***Orobanche coerulescens* Stephan ex Willd.**	Sanda 1984	G Per.				
			Rubiaceae			
***Galium parisiense* L.**	Prodan 1922; Prodan 1939	TH Ann.	III categ. (Prodan 1939); Oligotrophic, Xeromesophilous, Subtermophilic (Ciocârlan 1988, 1990)			
? *G. retrorsum*	Prodan 1922;		III categ. (Prodan			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
DC.	Prodan 1939		1939)			
G. verum L.	Guşuleac 1933; Prodan 1939; Csuros 1947; Prodan 1956; Bucur 1957a; Samoilă 1957; Bucur 1961; Şerbănescu 1965; Bucur 1967; Sanda 1978; Samú 1982; Pop 2000	H Per.	III categ. (Prodan 1939); Neohalophyte (Bucur 1961)		1. 38, 85, 285 2. 55, 90, 890	
G. palustre L.	Prodan 1956; Bucur 1957a; Pop 1959; Bucur 1961; Boşcaiu 1966; Nedelcu 1973; Popescu 1976; Grigore 1978; Mititelu 1987; Sanda 1991; Ştefan 1995b; Pop 2000; Sârbu 2000; Ştefan 2006	H Per.	Neohalophyte (Bucur 1961); Hygrophilous (Ciocârlan 1988, 1990)		1. 96, 110, 240 2. 85, 100, 160	
G. aparine L.	Bucur 1957a	TH	Eutrophic,			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	Others
		Ann.	Mesophilous – Mesohygrophilous (Ciocârlan 1988, 1990)			
G. rubioides L.	Bucur 1957a	H Per.	Mesophilous – Mesohygrophilous (Ciocârlan 1988, 1990)		1. , 65, 2. , 70,	
G. mollugo L.	Şerbănescu 1965	H Per.	Eurytrophe, Mesophilous – Xeromesophilous (Ciocârlan 1988, 1990)			
G. tricorne Stokes	Bucur 1957a; Bucur 1961	TH Ann.	Neohalophyte (Bucur 1961); Xeromesophilous, Subtermophilic (Ciocârlan 1988, 1990)		1. 25, 85, 108 2. 35, 90, 210	
G. glaucum L.	*Asperula glauca* (L.) Besser – Bucur 1957a	H Per.			1. 35, , 45 2. 45, , 55	
G. humifusum M. Bieb.	*A. humifusa* (M. Bieb.) Besser – Sch.	H Per.	Neohalophyte (Bucur 1961);		1. 35, 70, 140 2. 50, 80, 1135	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Cent X 1931; Bucur 1957a, b; Bucur 1961; Şerbănescu 1965; Bucur 1967; Sanda 1984; Burac 1997; Pop 2000		Xerophilous – Xeromesophilous (Ciocârlan 1988, 1990)			
***Asperula cynanchica* L.**	Bucur 1957a	H Per.	Oligotrophic, Xerophilous – Xeromesophilous, Termophile – Subtermophilic (Ciocârlan 1988, 1990)		1. 30, , 2. 45, ,	
Valerianaceae						
***Valeriana officinalis* L.**	Şerbănescu 1965	H Per.				
Dipsacaceae						
***Dipsacus fullonum* L.**	*Dipsacus silvester* Huds. – Bucur 1957a	Ht Bienn.	Mesophilous (Ciocârlan 1988, 1990)		1. 150, , 420 2. 80, , 410	
***Knautia arvensis* (L.) J. M. Coult.**	Bucur 1957a; Samú 1982	H Per.	Eurytrophe, Xeromesophilous – Mesophilous (Ciocârlan 1988,		1. 45, , 52 2. 80, , 410	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
			1990)			
***Scabiosa ochroleuca* L.**	Bucur 1957a; Samú 1982	Ht-H Bienn.-Per.	Xeromesophilous, Oligotrophic (Ciocârlan 1988, 1990)			
***Cephalaria transylvanica* (L.) Roem. et Schult.**	Popescu 1963	Ht Bienn.	Xerophilous – Xeromesophilous, Oligotrophic (Ciocârlan 1988, 1990)			
			Asteraceae			
***Mycelis muralis* (L.) Dumort.**	Rusu 1972	H Per.	Mesophilous (Ciocârlan 1988, 1990)			
***Tussilago farfara* L.**	Rusu 1972	G Per.	Mesophilous – Mesohygrophilous (Ciocârlan 1988, 1990)			
***Bellis perennis* L.**	Prodan 1939; Pop 1983	H Per.	III categ. (Prodan 1939); Mesophilous – Mesohygrophilous (Ciocârlan 1988, 1990)			
Aster oleifolius	Ciocârlan 2000;	H	I categ. (Prodan	Dry, sometimes	1. 30, 55, 230	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
(Lam.) Wagenitz (Fig. 84)	Sârbu 2001; *A. villosus* (L.) Sch. Bip., non Thunb. – Răvăruț 1941; Țopa 1954; *A. oleifolius* ssp. *canus* – Mititelu 1987; *A. cinereus* Korsh. – Prodan 1939; Bucur 1957a; Dobrescu 1960; Bucur 1960b; Mititelu 1965; Mititelu 1969; Turenschi 1970	Per.	1939); Supporting Halophyte (Țopa 1954); Euhalophyte (Bucur 1960a); Xerophilous, Subtermophilic, Oligotrophic (Ciocârlan 1988, 1990)	salinized meadows (Ciocârlan 1988, 1990)	2. 30, 260, 1480	
A. linosyris (L.) Bernh. (Fig. 85)	Prodan 1922; Prodan 1939; Csuros 1947; Țopa 1954; Bucur 1960a; Flora IX; Csuros 1961; Pall 1964b; Csuros-Kaptalan 1965; Dobrescu 1969; Turenschi 1970; Doltu 1979; Pop 1980; Samú	H Per.	II categ. (Prodan 1939); Supporting Halophyte (Țopa 1954); Euhalophyte (Bucur 1960a); Xeromesophilous, Subtermophilic (Ciocârlan 1988, 1990)	Dry, sometimes salinized habitats (Ciocârlan 1988, 1990); perennial, relatively common, mesothermophile heliophilous and less sciophilous, less and strictly alkaliphilous,	1. 115, 220, 290 2. 145, 210, 700	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1982; Pop 1983; Pop 1988; Sanda 1991; Ciocârlan 1994; Ciocârlan 2000			from less to strongly euhalophytic. It develops on salinized areas from slopes and water meadows with dry soil during the summer (Bucur, 1960a). We found this species only in dry, free from vegetation areas (Grigore, pers. obs.)		
A. sedifolius L. (Fig. 86)	Țopa 1954; Flora IX; Dobrescu 1969; Ciocârlan 1972; Sanda 1991; Ciocârlan 2000; Pop 2000; *A. punctatus* Waldst. & Kit. – Edel 1835;	H Per.	II categ. (Prodan 1939); Preferential Halophyte (Țopa 1954); Euhalophyte (Bucur 1960a); Mesohalophyte – Mesohygrohalophyte (Ciocârlan 1988,		1. 55, 220, 1210 2. 205, 700,2145	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Pax 1919; Sch. Cent. VII 1926; Guşuleac 1933; Prodan 1939; Răvăruț 1941; Prodan 1956; Dobrescu 1957; Popescu 1957; Bucur 1960; Popescu 1963; Doltu 1979; Mititelu 1978-1980; Sanda 1990b; Sanda 1991; Sârbu 2001; *A. punctatum* – Țopa 1969; *Galatella punctata* Cass. – Brandza 1879-1883; Schur. 1885; *A. sedifolius* L. ssp. *sedifolius*; var. *latifolius* (Rochel) Borbás – Doltu 1984		1990)			
A. canus Waldst.	Prodan 1922;	H	I categ. (Prodan	Wet, salinized		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
et Kit. (Fig. 87)	Prodan 1939; Flora IX; Ciocârlan 1994; Ciocârlan 2000; *Galatella cana* Nees. – Schur. 1885	Per.	1939)	meadows (Ciocârlan 1988, 1990)		
A. tripolium L. (Fig. 88)	Hacquet 1790-96; Edel 1835; Brandza 1879-1883; Grecescu 1898; Sch. Cent. VII 1926; Bujorean 1934; Țopa 1935; Sch. Cent. XV-XVI 1936; Prodan 1939; Răvăruț 1941; Csuros 1947; Todor 1948; Dobrescu 1957; Popescu 1957; Popescu 1957 b; Samoilă 1957; Bucur 1960a; Flora IX; Csuros 1961; König 1961; Ciurchea 1962a; Ciurchea 1962b;	H Per.	I categ. (Prodan 1939); Obligatory Halophyte (Țopa 1954, Andrei 1965); Euhalophyte (Bucur 1960a); Mesohygrohalophyte – Hygrohalophyte (Ciocârlan 1988, 1990)	Wet, salinized meadows (Ciocârlan 1988, 1990); perennial, very common, mesothermophile, heliophilous and less sciophilous, less and strictly alkaliphilous, from less to strongly euhalophyte. It generally develops on salinized humic gley sols, temporarily or permanently	1. 220, 300,1600 2. 245, 430,2140	The "obligatory" halophytic character of this species must be carefully reconsidered. Despite that a great number of botanists always mentioned this species as "obligatory" halophyte, our observations in the field suggest that it also grows in

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Pall 1964; Teşu 1964; Andrei 1965; Csuros-Kaptalan 1965; Mititelu 1965; Şerbănescu 1965; Bucur 1966; Sanda 1967; Csuros-Kaptalan 1966; Răvăruț 1968; Dobrescu 1969; Mihai 1969; Mititelu 1969; Țopa 1969; Csuros 1970; Turenschi 1970; Ciocârlan 1972; Mihai 1972; Mititelu 1972; Cristurean 1973; Dobrescu 1973; Popescu 1973; Sanda 1973; Mititelu 1975b; Popescu 1975; Cîrțu 1977; Pop 1977; Rudescu			humid (Bucur, 1960a). Plant with well developed underground system (root, rhizome) and slightly succulent leaves (Grigore, pers. obs.); resistant to flooding, due to the aerenchyma located especially in rhizome (Grigore and Toma, 2010b).		less salinized areas, together with non-halophytic taxa.

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1977; Ivan 1978; Sanda 1978; Doltu 1979; Mititelu 1978-1980; Pop 1980; Samú 1982; Pop 1983; Popescu 1984; Sanda 1984; Mititelu 1987; Popescu 1987; Pop 1988; Sanda 1990a; Sanda 1990b; Sanda 1991; Sanda 1992; Coste 1993; Ciocârlan 1994; Sârbu 1995a; Sârbu 1995b; Ştefan 1995a; Ştefan 1995b; Burac 1997; Ciocârlan 2000; Pop 2000; Sârbu 2000; Ştefan 2001b; Ştefan 2002; *A. tripolium* L., ssp. *tripolium*; f. *solstitialis* (Docke)					

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Morariu et. Nyár., ssp. *pannonicus* (Jacq.) Soó – Doltu 1984; *A. pannonicus* Jacq. – Prodan 1922; Prodan 1939; Răvăruț 1941; Prodan 1956; Popescu 1957; Popescu 1963; *A. tripolium* var. *pannonicus* – Țopa 1939; Țopa 1954; Dobrescu 1957; Bujorean 1961; Doltu 1983; Pop 2000; *A. tripolium* L. var. *typicus* – Csuros 1947; *A. tripolium* L. var. *tripolium* f. *diffusus* – Pătrașcu 1973; *Tripolium vulgare* N. a. E – Fuss 1866;					

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Schur. 1885; *T. vulgare* Nees. var. *diffusum* - Guebhard 1848); ssp. *tripolium,* ssp. *pannonicus* (Jacq.) Soó - Popescu – Domogled 1966; Pătraşcu 1973; Mititelu 1988; Sanda 1991; Coste 1993; Sârbu 1995a; Ştefan 2006					
A. x salignus Wiild.	*A. salina* – Țopa 1954	H Per.	Obligatory Halophyte (Țopa 1954)			
***Erigeron annuus* (L.) Pers**.	*Stenactis annua* (L.) Less. – Şerbănescu 1965; Samú 1982;	TH Ht, Ann., Bienn., Per.	Mesophilous (Ciocârlan 1988, 1990)			
***Conyza canadensis* (L.) Cronq.**	*Erigeron canadensis* L. – Bucur 1957a; Samoilă 1957;	Th Ann.	Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)		1. 30, 45, 60 2. 30, 45, 85	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Şerbănescu 1965; Cîrțu 1977; Sanda 1984; Sârbu 2003					
***Filago arvensis* L.**	Şerbănescu 1965; Popescu 1981	TH Ann.	Oligotrophic (Ciocârlan 1988, 1990)			
***Brachyactis ciliata* (Ledeb.) Ledeb.**	Ciocârlan 1994; Ciocârlan 2000; Sârbu 2001	TH Ann.		Wet, more or less salinized habitats (Ciocârlan 1988, 1990)		
***Gnaphalium luteoalbum* L.**	Sanda 1984	TH Ann.		Sandy, more or less wet places (Ciocârlan 1988, 1990)		
G. uliginosum L.	Csuros 1968; Sanda 1973	TH Ann.	Mesohygrophilous – Hygrophilous (Ciocârlan 1988, 1990)	Wet places, temporarily flooded (Ciocârlan 1988, 1990)		
***Inula britannica* L.** (Fig. 89)	Prodan 1922; Prodan 1923; Guşuleac 1933; Prodan 1939; Csuros 1947; Todor 1948; Țopa 1954; Prodan 1956; Bucur	Ht Bienn.	III categ. (Prodan 1939); Supporting Halophyte (Țopa 1954, Andrei 1965); Neohalophyte (Bucur 1961);	Wet, flooded habitats (Ciocârlan 1988, 1990)	1. 32, 100, 640 2. 30, 90, 1930	Medicinal plant

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1957a, b; Popescu 1957; Samoilă 1957; Pop 1959; Bucur 1961; Csuros 1961; Teşu 1964; Turenschi 1964; Andrei 1965; Şerbănescu 1965; Bucur 1966; Boşcaiu 1966; Bucur 1967; Răvăruț 1968; Mihai 1969; Turenschi 1970; Mihai 1972; Mititelu 1972; Rusu 1972; Dobrescu 1973; Pătraşcu 1973; Mititelu 1978-1980; Samú 1982; Mititelu 1987; Mititelu 1988; Sanda 1991; Coste 1993; Ciocârlan 2000; Pop 2000		Mesophilous – Mesohygrophilous, facultative halophyte (Ciocârlan 1988, 1990)			
***Pulicaria vulgaris* Gaertn.**	Prodan 1922; Isăcescu 1939;	TH Ann.	III categ. (Prodan 1939);	Temporarily flooded habitats		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Prodan 1939; Prodan 1956; Samoilă 1957; Pop 1959; Şerbănescu 1965; Boşcaiu 1966; Csuros 1968; Mititelu 1971b; Rusu 1972; Pătraşcu 1973; Doltu 1979; Sanda 1991; Ştefan 1995b; Coste 1993; Pop 2000; Ştefan 2002; *P. prostrata* Asch. – Țopa 1969		Mesohygrophilous (Ciocârlan 1988, 1990	(Ciocârlan 1988, 1990)		
P. dysenterica (L.) Bernh.	König 1961; Şerbănescu 1965; Popescu 1976; Sârbu 1995a; Ştefan 2006	H Per.	Mesohygrophilous (Ciocârlan 1988, 1990)	Wet meadows, flooded habitats (Ciocârlan 1988, 1990)		
***Xanthium spinosum* L.**	Prodan 1956; Bucur 1957a; Şerbănescu 1965; Răvăruț 1968; Pop 1969b; Rusu 1972;	TH Ann.	Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)		1. 15, 60, 385 2. 25, 80, 1205	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Dobrescu 1973; Popescu 1976; Ivan 1978; Sanda 1984; Sanda 1991; Sârbu 2003					
X. strumarium L.	Bucur 1957a; Samoilă 1957; Andrei 1962; Mihai 1969; Pop 1969b; Turenschi 1970; Mihai 1972; Rusu 1972; Pătraşcu 1973; Sanda 1984; Popescu 1987; Sanda 1991; Coste 1993; Pop 2000	TH Ann.	Mesophilous – Mesohygrophilous (Ciocârlan 1988, 1990)		1. 35, 60, 125 2. 30, 70, 39	
X. italicum Moretti	Prodan 1956; Pop 1977; Sanda 1984; Sanda 1991; Sârbu 1995a	TH Ann.	Mesophilous – Mesohygrophilous, Subtermophilic (Ciocârlan 1988, 1990)			
***Bidens tripartita* L.**	Mihai 1969; Mititelu 1987; Sanda 1991; Pop	TH Ann.	Mesohygrophilous – Hygrophilous (Ciocârlan 1988,	Wet places, marshes, watersides	1. 65, , 230 2. 35, , 320	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	2000; Ştefan 2001b; *Bidens tripartitus* L. – Bucur 1957a; Şerbănescu 1965; Boşcaiu 1966; Popescu 1976		1990)	(Ciocârlan 1988, 1990)		
B. cernua L.	Sanda 1991; *B. cernuus* – Popescu 1976	TH Ann.	Mesohygrophilous – Hygrophilous (Ciocârlan 1988, 1990)	Watersides, marshes (Ciocârlan 1988, 1990)		
***Anthemis tinctoria* L.**	Rusu 1972	H Per.	Xeromesophilous (Ciocârlan 1988, 1990)			
***Achillea asplenifolia* Vent.**	Prodan 1922; Prodan 1939; Prodan 1956; Ciocârlan 1994; Sârbu 2001	H Per.	I categ. (Prodan 1939); Mesohygrohalophyte (Ciocârlan 1988, 1990)	Wet meadows, less salinized marshes (Ciocârlan 1988, 1990)		
A. pannonica Scheele	Bucur 1957a; Pătraşcu 1973	H Per.			1. 55, 80, 165 2. 60, 90, 270	
A. collina Becker ex Rchb.	Prodan 1922; Prodan 1939; Csuros 1947; Bucur 1957a, b; Samoilă 1957; Pop	H Per.	III categ. (Prodan 1939); Neohalophytes (Bucur 1961);	Meadows, sometimes salinized habitats (Ciocârlan 1988,	1. 30, 70, 440 2. 45, 100, 1050	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1959; Bucur 1961; Flora IX; Şerbănescu 1965; Bucur 1966; Rusu 1972; Pop 1980; Pop 1983; Popescu 1984; Mititelu 1987; Sanda 1991; Coste 1993; Ciocârlan 2000; Pop 2000		Xerophilous – Xeromesophilous (Ciocârlan 1988, 1990)	1990)		
A. setacea Waldst. et Kit.	Prodan 1922; Prodan 1939; Prodan 1956; Bucur 1957a; Bucur 1961; Popescu 1963; Turenschi 1964; Bucur 1966; Bucur 1967; Răvăruț 1968; Mihai 1969; Mititelu 1969; Turenschi 1970; Sanda 1978; Mititelu 1978-1980; Sanda 1990b;	H Per.	III categ. (Prodan 1939); Neohalophyte (Bucur 1961); Oligotrophic, Xerophilous – Xeromesophilous (Ciocârlan 1988, 1990)		1. 15, 70, 310 2. 25, 50, 1370	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Sanda 1991; Coste 1993; *A. setacea* Waldst. & Kit. f. *salina* – Rusu 1972; Pop 2000					
Achillea nobilis L. ssp. *neilreichii* (A.Kern.) Velen	*A. neilreichii* A. Kern. – Rusu 1972	H Per.	Xerophilous – Xeromesophilous, Subtermophilic (Ciocârlan 1988, 1990)			
A. millefolium L.	Prodan 1923; Csuros 1947; Prodan 1956; Samoilă 1957; Samoilă 1960; Pop 1969a; Mihai 1972; Samú 1982; *A. millefolium* var. *pannonica* Scheele – Guşuleac 1933	H Per.	Mesophilous (Ciocârlan 1988, 1990)			
***Matricaria recutita* L.** (Fig. 90)	Ciocârlan 1994; Ciocârlan 2000; Sârbu 2001; *M. chamomilla* L.p.p.- Prodan 1922;	TH Ann.	II categ. (Prodan 1939); Supporting Halophyte (Ţopa 1954); Neohalophyte	Sometimes salinized meadows (Ciocârlan 1988, 1990)		Medicinal plant

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Prodan 1923; Prodan 1939; Țopa 1939; Răvăruț 1941; Țopa 1954; Bucur 1957a; Popescu 1957; Samoilă 1957; Buia 1959; Căzăceanu 1959; Pop 1959; Flora IX; Bucur 1961; Csuros 1961; Crişan 1962; Popescu 1963; Pall 1964; Turenschi 1964; Mititelu 1965; Şerbănescu 1965; Bucur 1966; Popescu – Domogled 1966; Morariu 1967; Răvăruț 1968; Mihai 1969; Mititelu 1969; Turenschi 1970; Mititelu 1971a;		(Bucur 1961); Xeromesophilous – Mesophilous, Facultative halophyte (Ciocârlan 1988, 1990)			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Mihai 1972; Mititelu 1972; Rusu 1972; Dobrescu 1973; Pătraşcu 1973; Mititelu 1975b; Sanda 1978; Doltu 1979; Mititelu 1978-1980; Pop 1980; Popescu 1984; Mititelu 1987; Sanda 1990b; Sanda 1991; Coste 1993; Burac 1997; Pop 2000; *M. chamomilla* f. *salina* – Coste 1993; Todor 1948; Bujorean 1961; Rusu 1972; Pop 2000; *M. recutita* f. *salina* – Țopa 1969; *M. salina* Schur. – Schur 1885					
M. dscoidea DC.	*M. matricarioides* (Less.) Porter -	TH Ann	Mesophilous (Ciocârlan 1988,			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Burac 1997		1990)			
M. perforata Mérat	*Matricaria inodora* L. – Bucur 1957a, b; Samoilă 1957; Bucur 1961; Popescu 1963; Pall 1964 ; Şerbănescu 1965; Bucur 1966; Bucur 1967; Dobrescu 1969; Mihai 1969; Mihai 1972; Rusu 1972; Dobrescu 1973; Pătraşcu 1973; *Tripleurospermum inodorum* (L.) Sch. Bip. – Sârbu 2001	TH-Ht Ann. - Bienn.	Neohalophyte (Bucur 1961); Mesophilous (Ciocârlan 1988, 1990)		1. 65, 110, 970 2. 55, 100, 1540	
***Leucanthemum vulgare* Lam.**	*Crysanthemum leucanthemum* L. – Csuros 1947	H Per.	Xeromesophilous – Mesophilous, Oligotrophic (Ciocârlan 1988, 1990)			
***Artemisia santonica* L.** (Fig. 91)	Sanda 1992; Ciocârlan 2000; Ştefan 2001b; *A.*	Ch (H), Per.	I categ. (Prodan 1939); Euhalophyte (Bucur 1960a);		1. 30, (400) 90, 910 2. 120, 430, 2410	*A. maritima* L. grows actually in the NV of

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	monogyna Waldst. & Kit. – Fuss 1866; Schur 1885; Prodan 1922; Isăcescu 1939; Țopa 1939 ; Prodan 1956; Samoilă 1957; Bujorean 1961; Guşuleac 1962; Popescu 1963; Borza 1966; Pătraşcu 1973; Mititelu 1975; Doltu 1979; *A. maritima* L. – Fuss 1866; Brandza 1879-1883; Schur 1885; Pax 1919; Csuros 1947; Bucur 1957a, b; Dobrescu 1957; Moşneagă 1958; Bucur 1960a; Csuros 1961; Andrei 1962; Ciurchea 1962a;		Supporting Halophyte (Andrei 1965); Xeromesophilous – mesophilous, Obligatory Halophyte (Ciocârlan 1988, 1990)			Europe (Ciocarlan, 2009). Despite that it was mentioned for many years by Romanian botanists, most likely he was erroneously identified or assimilated with *A. santonica*; these are distinct taxa (Ciocarlan, 2009). Anyway, *A. maritima* is here listed, assuming that in fact it refers to *A. santonica*.

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Ciurchea 1962b; Crişan 1962; Popescu 1963; Andrei 1965; Csuros-Kaptalan 1965; Turenschi 1964; Şerbănescu 1965; Bucur 1966; Flora IX; Sanda 1967; Răvăruț 1968; Dihoru 1969; Mititelu 1969; Țopa 1969; Turenschi 1970; Mititelu 1971a; Mititelu 1972; Sanda 1973; Mititelu 1975b; Popescu 1975; Ivan 1978; Sanda 1978; Doltu 1979; Pop 1983; Mititelu 1978-1980; Popescu 1984; Sanda 1984; Sanda 1990a; Sanda					

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1990b; Sârbu 1995a; Burac 1997; Pop 2000; <u>*A. maritima* L.</u> (including *A. salina* Willd.) var. *pendula* (Schur.) Hayek – Doltu 1984; *A. maritima* L. ssp. *salina* (Willd.) Nyman – Mihai 1969; Mihai 1972; Dobrescu 1973; Pătraşcu 1973; Pop 1980; Mititelu 1987; Sanda 1991; *A. maritima* L. ssp. *maritima*, ssp. *salina* (Willd) Gams, ssp. *monogyna* (Waldst. & Kit.) Gams – Doltu 1983; *A. maritima* L. var. *salina* (Willd.)					

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Koch, f. *pendula* (Schur) Nyar, var. *monogyna* (Waldst. & Kit.) Fritsch – Todor 1948; *A. santonicum* L. – Grecescu 1898; Sch. Cent I 1921; Sanda 1991; Coste 1993; Ciocârlan 1994; Sârbu 2001; Ştefan 2001a; Pop 2000; Ştefan 2002; *A. maritima* L. ssp. *monogyna* (Waldst. & Kit.) Gams – Pop 1959; Popescu 1963; Pătraşcu 1973; Ciocârlan 1972; Sanda 1978; Popescu 1981; Popescu 1984; Sanda 1984; Pop 2000; *A. maritima* L. ssp. *salina*					

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	(Willd.) Nyman – Ciocârlan 1972; *A. maritima* – *salina* – Cîrțu 1977; *A. maritima* L. var. *erecta* – Popescu 1957; Ciurchea 1962a; Popescu-Domogled 1966; *A. salina* Willd. – Edel 1835; Guebhard 1848; Schur 1885; Pax 1919; Papp 1939; Răvăruț 1941; Samoilă 1957; Mititelu 1965; Pop 1988; *A. salina* Willd. ssp. *monogyna*; ssp. *pendula* – Prodan 1939; *A. salina* Willd. ssp. *monogyna* Waldst. & Kit. – Sch. Cent. XVII-XVIII 1938;					

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	A. maritima L. ssp. *salina* (Willd) Gms. var. *pendula* (Schur) Hay – Andrei 1965					
A. austriaca Jacq.	Prodan 1922; Papp 1939; Prodan 1939; Țopa 1954; Bucur 1957a, b; Samoilă 1957; Bucur 1961; Andrei 1962; Şerbănescu 1965; Bucur 1966; Rusu 1972; Popescu 1981; Popescu 1984; Sanda 1984; Pop 2000	Ch Per.	II categ. (Prodan 1939); Supporting Halophyte (Țopa 1954); Neohalophyte (Bucur 1961); Xerophilous – Xeromesophilous, Subtermophilic (Ciocârlan 1988, 1990)		1. 15, 70, 970 2. 55, 70, 1930	
A. annua L.	Sârbu 2003	TH Ann.	Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)			
A. pontica L.	Prodan 1922; Guşuleac 1933; Prodan 1939; Țopa 1954; Prodan 1956;	H (Ch) Per.	II categ. (Prodan 1939); Supporting Halophyte (Țopa 1954);		1. 45, 65, 75 2. 35, 70, 220	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	Others
	Bucur 1957a; Flora IX; Ciocârlan 1972; Mititelu 1978-1980; Mititelu 1987; Sanda 1990b; Ciocârlan 1994; Pop 2000		Xeromesophilous – Mesophilous, Subtermophilic, facultative halophyte (Ciocârlan 1988, 1990)			
? *A. laciniata* Willd.	Prodan 1939		I categ. (Prodan 1939)			Erroneously mentioned in Romania (Flora IX)
A. absinthium L.	Bucur 1957a; Şerbănescu 1965	H (Ch) Per.	Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)		1. 55, 70, 120 2. 80, 95, 290	
A. scoparia Waldst. et Kit.	Şerbănescu 1965	Ht Bienn.	Oligotrophic, Xeromesophilous (Ciocârlan 1988, 1990)			
A. campestris L.	Mititelu 1987	Ch Ann.	Xeromesophilous (Ciocârlan 1988, 1990)			
***Senecio erraticus* Bertol.**	Prodan 1939; Csuros 1947; Csuros 1961;	Ht Bienn.	II categ. (Prodan 1939)			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Csuros 1970; *S. erraticus* Bertol. ssp. *barbareaefolius* (Wimm. & Grab.) Beger – Csuros 1947; *S. barbareifolius* Krock – Pop 2000					
S. jacobea L.	*S. jacobeus* – Şerbănescu 1965; Rusu 1972; *S. iacobea* L. - Bucur 1957a; Samú 1982	H Per.			1. 45, 65, 105 2. 35, 80, 150	
S. vernalis Waldst. et Kit.	Bucur 1957a; Bucur 1957a, b; Şerbănescu 1965; Rusu 1972	TH Ann.	Xeromesophilous (Ciocârlan 1988, 1990)		1. 40, , 85 2. 45, , 85	
S. doria L.	Bucur 1957a	H Per.	Mesophilous, Mesohygrophilous (Ciocârlan 1988, 1990)		1. , 65, 2. , 55,	
***Xeranthemum annuum* L.**	Buia 1959	TH Ann.	Oligotrophic, Xerophilous – Xeromesophilous, Subtermophilic (Ciocârlan 1988,			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	Others
			1990)			
Arctium lappa **L.**	Bucur 1957a	Ht Bienn.	Xeromesophilous – Mesohygrophilous (Ciocârlan 1988, 1990)		1. 45, 45, 70 2. 50, 150, 440	
Carduus nutans **L.**	Bucur 1957a; Şerbănescu 1965; Răvăruț 1968; Sanda 1984; Sanda 1991	Ht Bienn.	Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)		1. 50, 70, 110 2. 55, 100, 520	It not grows in Romania (Ciocarlan, 2009)
C. acanthoides L.	Bucur 1957a; Şerbănescu 1965; *C. achantoides* L. var. *albiflorus* Schur. – Rusu 1972	Ht Bienn.	Xeromesophilous (Ciocârlan 1988, 1990)		1. 30, 60, 100 2. 20, 65, 330	
C. hamulosus Ehrh.	Sanda 1978	Ht Bienn.	Oligotrophic, Xeromesophilous, Subtermophilic (Ciocârlan 1988, 1990)			
Petasites spurius **(Retz.) Rchb.**	*Petasites tomentosus* DC. – Prodan 1939	G Per.	III categ. (Prodan 1939)	Maritime sands (Ciocârlan 1988, 1990)		
Cirsium brachycephalum	Prodan 1922; Prodan 1939; Pop	Ht Bienn.	II categ. (Prodan 1939);	Marshes, spmetimes		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
Juratzka	1959; Ciocârlan 2000; Flora IX		Hygrophilous (Ciocârlan 1988, 1990)	salinized (Ciocârlan 1988, 1990)		
C. alatum (S. G. Gmel.) Bobrov	Popescu 1987; Sanda 1992; Ciocârlan 1994; Sârbu 1995a; Ştefan 1995b; Ciocârlan 2000; Sârbu 2001	G Per.		Wet, marshy, less salinized meadows (Ciocârlan 1988, 1990)		
Cirsium pannonicum (L.f.) Link	*C. pannonicum* Gând**.** – Prodan 1922	H Per.				
C. canum (L.) All.	Guşuleac 1933; Prodan 1939; Todor 1948; Prodan 1956; Popescu 1963; Csuros-Kaptalan 1965; Şerbănescu 1965; Csuros 1970; Turenschi 1970; Mihai 1972; Doltu 1979; Sanda 1991; Pop 2000	G Per.	II categ. (Prodan 1939); Mesohygrophilous – Hygrophilous (Ciocârlan 1988, 1990, 1990)			

Species	**Authors with cited species/Synonyms**	**Life form**	**Halophyte type/ecological type**	**Habitat / Ecological spectrum**	**Salinity tolerance** **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	**Others**
C. arvense (L.) Scop.	Bucur 1957a, b; Popescu 1963; Şerbănescu 1965; Bucur 1967; *C. arvense* (L.) Scop. var. *horridum* – Sanda 1984; *C. arvense* f. *incanum* – Rusu 1972	G Per.	Xeromesophilous – Mesohygrophilous (Ciocârlan 1988, 1990)		1. 20, 80, 170 2. 44, 60, 350	
C. vulgare (Savi) Ten.	Bucur 1957a; Samú 1982; Sanda 1984; Sârbu 2003; *C. lanceolatum* (L.) Scop, non Hill. – Samoilă 1957; Samoilă 1960; Şerbănescu 1965; Dobrescu 1973; Pătraşcu 1973; Sanda 1984	Ht Bienn.	Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990, 1990)		1. 65, 100, 120 2. 105, 240, 720	
C. furiens Griseb. et Schenk	Bucur 1957a	Ht Bienn.			1. , 85, 2. , 110,	
C. rivulare (Jacq.) All.	Csuros-Kaptalan 1965	H Per.	Mesohygrophilous (Ciocârlan 1988, 1990, 1990)	Wet meadows, riversides (Ciocârlan 1988,		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	Others
				1990, 1990)		
***Onopordum acanthium* L.**	Bucur 1957a; Şerbănescu 1965	Ht Bienn.	Xeromesophilous (Ciocârlan 1988, 1990)		1. 40, 60, 155 2. 40, 70, 140	
***Seratula bulgarica* Acht. et Stoj.**	Sanda 1978; Ciocârlan 2000; Sârbu 2001; *S. caput-najae* Zahar. – Flora IX; Şerbănescu 1965	H Per.	Mesohalophyte (Ciocârlan 2000)	More or less wet, less salinized meadows (Ciocârlan 1988, 1990)		
S. wolfii Andrae	*S. coronata* L. pro parte - Guşuleac 1933; Ţopa 1954	H Per.	Accidental Halophyte (Ţopa 1954)			
***Jurinea arachnoides* Bunge**	*Jurinea arachnoidea* Bge. – Bucur 1957a	H Per.			1. , 35, 2. , 40	
***Stemmacantha serratuloides* (Georgi) M. Dittrich** (Fig. 92)	Ciocârlan 2000; *Leuzea altaica* (Fisch. Ex. Spreng.) Link – Ciocârlan 1994; Sârbu 2001; *L. salina* Spreng. – Sch. Cent. IV et V 1924; Prodan 1939;	H Per.	I categ. (Prodan 1939); Obligatory Halophyte (Ţopa 1954); Mesohygrohalophilous (Ciocârlan 1988, 1990)	Wet, salinized meadows (Ciocârlan 1988, 1990)	1. 65, 100, 520 2. 200, 260,2111	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Ţopa 1939; Răvăruţ 1941; Ţopa 1954; Bucur 1957a; Mititelu 1965; Bucur 1967; Mititelu 1967; Pătraşcu 1973; Doltu 1979; Popescu 1984; Mititelu 1987; Sanda 1990b; Pop 2000					
***Centaurea pannonica* (Heuff) Simonk.**	Prodan 1922; Prodan 1939; Csuros 1947	H Per.	III categ. (Prodan 1939); Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)			
C. scabiosa L.	Bucur 1957a, b	H Per.	Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)		1. 45, 65, 75 2. 55, 70, 85	
C. diffusa Lam.	Andrei 1962; Şerbănescu 1965; Popescu 1981	TH Ann.				

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	Others
C. solstitialis L.	Bucur 1957a; Bucur 1961; Şerbănescu 1965; Dobrescu 1973; Sanda 1978	Ht Bienn.	Neohalophyte (Bucur 1961); Xeromesophilous, Subtermophilic (Ciocârlan 1988, 1990)		1. 45, 70, 245 2. 40, 80, 700	
C. calcitrapa L.	Samoilă 1957; Şerbănescu 1965; Pop 2000	Ht Bienn.				
C. *micranthos* S.G. Gmel. ex Hayek	Samú 1982; Sanda 1984	Ht-H Bienn.-Per.				
C. jacea L.	Guşuleac 1933; Csuros 1947; Samú 1982; Burac 1997; Mihai 1972; *C. jacea* var. *nouasuliţae* (Prodan & Săvul.) – Guşuleac 1933	H Per.	Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)			
C. pontica Prod. et Nyár	Sârbu 2003	Ht Bienn.		Maritime sands (Ciocârlan 1988, 1990)		
C. stoebe L.	*C. rhenana* Boreau	Ht				

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	– Rusu 1972	Bienn.				
C. apiculata Ledeb. ssp. *spinulosa* (Rochel) Dostál	*C. spinulosa* Eochel - Rusu 1972					
C. rocheliana (Heuff.) Dostál	*C. banatica* Rochel ex Hayek, non A. Kern. – Csuros 1947; Prodan 1956; Csuros 1961	H Per.				
***Cichorium intybus* L.**	Prodan 1923; Guşuleac 1933; Prodan 1939; Csuros 1947; Prodan 1956; Bucur 1957a; Samoilă 1957; Andrei 1962; Andrei 1965; Şerbănescu 1965; Mihai 1972; Rusu 1972; Popescu 1981; Samú 1982; Pop 1983; Sanda 1984; Burac 1997; Pop 2000; Sârbu	H Per.	III categ. (Prodan 1939); Supporting Halophyte (Andrei 1965)		1. 20, 75, 240 2. 50, 100, 1920	Medicinal plant

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	2000					
***Tragopogon pratensis* L.**	Prodan 1956; Bucur 1957a; Şerbănescu 1965; *T. orientalis* L.- Guşuleac 1933; Bucur 1967	Ht-H Bienn.-Per.	Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)		1. 72, 75, 115 2. 47, 95, 445	
? *T. livescens* Besser	Guebhard 1848					
***Scorzonera cana* (C. A. Mey.) Hoffm.** (Fig. 93)	Pax 1919; Prodan 1939; Răvăruț 1941; Csuros 1947; Prodan 1956; Csuros 1961; Teşu 1964; Csuros-Kaptalan 1965; Turenschi 1964; Mititelu 1965; Țopa 1969; Csuros 1970; Doltu 1984; Sanda 1990b; Sanda 1991; Coste 1993; Burac 1997; Ciocârlan 2000; Pop 2000; Sârbu 2001; *S. cana*	G Per.	I categ. (Prodan 1939); Obligatory Halophyte (Țopa 1954, Andrei 1965); Euhalophyte (Bucur 1960a); Xeromesophilous – Mesohygrophilous, Subtermophilic (Ciocârlan 1988, 1990)	Dry, more or less salinized meadows (Ciocârlan 1988, 1990); Perennial, mesophilous, sometimes xerophilous and less hygrophilous, heliophilous and less sciophilous strictly and strongly alkaliphilous, varying from less	1. 30, 110, 460 2. 30, 180, 2175	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	f. *simplex* – Csuros 1947; *Podospermum canum* C. A. Mey. – Prodan 1923; Țopa 1954; Bucur 1957a, b; Dobrescu 1957; Căzăceanu 1959; Pop 1959; Bucur 1960a,b; Bujorean 1961; Flora X; Andrei 1965; Şerbănescu 1965; Bucur 1966; Borza 1966; Bucur 1967; Răvăruț 1968; Mihai 1969; Mititelu 1969; Turenschi 1970; Mititelu 1971a; Mihai 1972; Mititelu 1972; Dobrescu 1973; Pătraşcu 1973; Mititelu 1975b;			to strongly euhalophytic (Bucur, 1960a); Plant with deep underground system (root, rhizome) (Grigore and Toma, 2010b) developing mostly on dry salinized areas, as isolated individuals in patches free of vegetation (Grigore, pers. obs.)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Ivan 1978; Sanda 1978; Doltu 1979; Mititelu 1978-1980; Pop 1980; Popescu 1981; Pop 1983; Popescu 1984; Antohe 1986; Mititelu 1987; Sanda 1990b; *P. canum* C.A. Mey., var. *tenuissima* Borb – Doltu 1983; *Podospermum jacquinianum* Koch. – Grecescu 1898; Prodan 1922					
S. laciniata L. (Fig. 94)	Pax 1919; Sch. Cent. VII 1926; Isăcescu 1939; Prodan 1939; Prodan 1956; Ciocârlan 1994; Ciocârlan 2000; Pop 2000; *Podospermum*	Ht-H Bienn., Per.	I categ. (Prodan 1939); Xeromesophilous – Mesophilous, Subtermophilic, Facultative halophyte (Ciocârlan 1988, 1990)	Meadows, sometimes salinized (Ciocârlan 1988, 1990)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	laciniatum (L.) D. C.- Fuss 1866; Grecescu 1898; Guşuleac 1933; Popescu 1957; Samoilă 1957; Moşneagă 1958; Samoilă 1960; Bujorean 1961; Borza 1964; Şerbănescu 1965; Popescu-Domogled 1966; Pătraşcu 1973; Sanda 1978; Pop 1980; Sanda 1984					
S. parviflora Jacq. (Fig. 95)	Fuss 1866; Schur 1885; Bujorean 1934; Prodan 1939; Sch. Cent. XXIV-XXV 1943; Csuros 1947; Todor 1948; Țopa 1954; Csuros 1961; Borza 1964; Pall 1964; Csuros-	H (Ht) Per. Bienn.	I categ. (Prodan 1939); Obligatory Halophyte (Țopa 1954); Mesohygrohalophyte (Ciocârlan 1988, 1990)	Wet salinized meadows (Ciocârlan 1988, 1990)		

Species	**Authors with cited species/Synonyms**	**Life form**	**Halophyte type/ecological type**	**Habitat / Ecological spectrum**	**Salinity tolerance** **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	**Others**
	Kaptalan 1965; Borza 1966; Flora X; Csuros 1970; Mititelu 1978-1980; Doltu 1979; Pop 1980; Samú 1982; Doltu 1983; Mititelu 1988; Sanda 1990b; Ciocârlan 1994; Ciocârlan 2000; Pop 2000; Sârbu 2001					
S. austriaca L.	Țopa 1939; Bucur 1960a; Teşu 1964; Şerbănescu 1965; Răvăruț 1968; Mititelu 1971a; Doltu 1979; Sanda 1990b; Sanda 1991; *S. austriaca* Willd. var. *mucronata* – Prodan 1939; Țopa 1954; Sanda 1978; *A. austriaca* var.	G Per.	II categ. (Prodan 1939); Obligatory Halophyte (Țopa 1954); Euhalophyte (Bucur 1960a); Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)		1. 15, 140, 395 2. 225, 1460, 1930	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	mucronata – Țopa 1954					
***Chondrilla juncea* L.**	Şerbănescu 1965	Ht-H Bienn. – Per.	Xeromesophilous, Subtermophilic (Ciocârlan 1988, 1990)			
***Leontodon autumnalis* L.**	Prodan 1923; Guşuleac 1933; Andrei 1962; Boşcaiu 1966; Rusu 1972; Sanda 1973; Samú 1982; *Leontodon autumnale* – Prodan 1939; Csuros 1947	H Per.	III categ. (Prodan 1939); Mesophilous (Ciocârlan 1988, 1990)			
L. hispidus L.	Csuros 1947; Rusu 1972	H Per.				
***Picris hieracioides* L.**	Bucur 1957a ; Samoilă 1957; Rusu 1972	Ht-H Bienn.-Per.	Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)		1. 45, 70, 130 2. 55, 70, 265	
***Taraxacum bessarabicum* (Hornem) Hand. – Mazz.** (Fig.	Prodan 1922; Prodan 1923; Guşuleac 1933; Țopa 1935; Prodan	H Per.	I categ. (Prodan 1939); Obligatory Halophyte (Țopa 1954);	Wet, salinized meadows (Ciocârlan 1988, 1990)	1. 80, 300, 630 2. 100, 300, 580	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
96)	1939; Țopa 1939; Răvăruț 1941; Țopa 1954; Dobrescu 1957; Pop 1959; Bucur 1960a; Flora X; Csuros 1961; Andrei 1962; Şerbănescu 1965; Bucur 1966; Borza 1966; Răvăruț 1968; Mihai 1969; Turenschi 1970; Mititelu 1969; Mititelu 1971a; Mihai 1972; Dobrescu 1973; Pătraşcu 1973; Ivan 1978; Sanda 1978; Doltu 1979; Mititelu 1978-1980; Pop 1980; Popescu 1981; Samú 1982; Doltu 1983; Pop 1983; Doltu 1984; Popescu 1984;		Euhalophyte (Bucur 1960a); Mesohygrophilous – Hygrophilous (Ciocârlan 1988, 1990)			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Sanda 1984; Mititelu 1987; Sanda 1990a; Sanda 1990b; Sanda 1991; Ciocârlan 1994; Ştefan 1995b; Burac 1997; Ciocârlan 2000; Pop 2000; Sârbu 2001					
T. serotinum (Waldst. et Kit.) Fisch.	Prodan 1922; Prodan 1939; Şerbănescu 1965; Mihai 1972; Sanda 1984; Sanda 1991; Pop 2000	H Per.	II categ. (Prodan 1939); Xeromesophilous, Subtermophilic (Ciocârlan 1988, 1990)			
T. officinale Weber ex F. H. Wigg.	Prodan 1923; Csuros 1947; Prodan 1956; Bucur 1957a, b; Samoilă 1957; Buia 1959; Samoilă 1960; Csuros-Kaptalan 1965; Şerbănescu 1965; Bucur 1967;	H Per.	Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)		1. 55, 90, 520 2. 65, 75, 1610	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Răvăruț 1968; Mihai 1969; Rusu 1972; Dobrescu 1973; Sanda 1973; Mihai 1977; Mititelu 1978-1980; Samú 1982; Pop 2000					
T. erythrospermum Andrz. ex Besser s. l.	*T. laevigatum* (Willd.) DC. – Prodan 1956; Csuros 1961	H Per.	Xerophilous – Xeromesophilous (Ciocârlan 1988, 1990)			
***Lactuca tatarica* (L.) C. A. Mey.**	Popescu 1987; Ciocârlan 1994; Sârbu 1995a; Ciocârlan 2000; *Mulgedium tataricum* DC. – Pax 1919; Prodan 1922; Prodan 1939; Pop 2000	H Per.	II categ. (Prodan 1939); Meso-Hygrohalophyte (Ciocârlan 1988, 1990)			
L. saligna L. (Fig. 97)	Grecescu 1898; Pax 1919; Guşuleac 1933; Prodan 1939;	TH-Ht Bienn. – Ann.	II categ. (Prodan 1939); Supporting Halophyte (Țopa	Quite common, xerophilous to mesophilous,	1. 30, 75, 535 2. 20, 85, 1120	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Răvăruț 1941; Țopa 1954; Prodan 1956; Bucur 1957a, b; Dobrescu 1957; Popescu 1957; Samoilă 1957; Bucur 1960a, b; Bujorean 1961; Andrei 1962; Borza 1964; Pall 1964; Andrei 1965; Şerbănescu 1965; Mititelu 1969; Mititelu 1972; Rusu 1972; Pătraşcu 1973; Mititelu 1987; Coste 1993; Ciocârlan 1994; Burac 1997; Ciocârlan 2000; Pop 2000		1954; Andrei 1965); Euhalophyte (Bucur 1960a); Xeromesophilous, Subtermophilic, Facultative Halophyte (Ciocârlan 1988, 1990)	mesothermophile, heliophilous and less sciophilous, from less to moderately euhalophytic (Bucur, 1960a). We found it almost always in dry salinized areas (Grigore, pers. obs.)		
L. serriola L.	Prodan 1956; Bucur 1957a; Samoilă 1957; Dobrescu 1973	Ht Bienn.	Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)		1. 55, 65, 235 2. 55, 80, 875	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	Others
***Sonchus arvensis* L.**	Bujorean 1934; Bucur 1957a; Mihai 1969; Sanda 1984; Sanda 1991; Ciocârlan 1994; Sârbu 1995a; Pop 2000	G Per.			1. 35, 90, 460 2. 45, 100, 1140	
S. asper (L.) Hill.	Bucur 1957a	TH, Ht Ann.	Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)		1. , 82, 2. , 85,	
S. oleraceus L.	Bucur 1957a	TH Ann.	Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)		1. 32, 55, 80 2. 50, 100, 320	
S. palustris L.	Bujorean 1934	G Per.	Mesohygrophilous – Hygrophilous (Ciocârlan 1988, 1990)	Watersides, marshes (Ciocârlan 1988, 1990)		
***Crepis setosa* Haller f.**	Bucur 1957a; Şerbănescu 1965; Coste 1993	TH Ann.	Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)		1. 45, 70, 108 2. 25, 75, 95	
C. foetida L.	Sanda 1984	TH Ann.	Xeromesophilous – Mesophilous			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
			(Ciocârlan 1988, 1990)			
C. biennis L.	Csuros 1947; Samú 1982	Ht Bienn.	Mesophilous (Ciocârlan 1988, 1990)			
***Hieracium bauhinii* Schult**	Prodan 1922; Isăcescu 1939; Sanda 1978; Samú 1982					
H. x auriculoides Láng.	Prodan 1922					
H. pilosella L.	Pop 1959; Rusu 1972; Pop 2000	H Per.				
			Alismataceae			
***Alisma plantago – aquatica* L.**	Bucur 1957a; Şerbănescu 1965; Răvăruț 1968; Nedelcu 1973; Mihai 1977; Popescu 1981; Samú 1982; Mititelu 1987; Ştefan 1995b; Pop 2000; Sârbu 2000;	HD Per.	Hygrophilous – Hydrophilous (Ciocârlan 1988, 1990)	Riversides, waters, marshes (Ciocârlan 1988, 1990)	1. 95, 200, 680 2. 55, 160, 970	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Ştefan 2001b; Ştefan 2006; *A. plantago* – Prodan 1956; Boşcaiu 1966					
A. gramineum Lej.	Flora XI	HD Per.	Hygrophilous – Hydrophilous (Ciocârlan 1988, 1990)	Marshes, watersides (Ciocârlan 1988, 1990)		
A. lanceolatum With.	Csuros 1947; Răvăruț 1968; Samú 1982; Sanda 1991; Pop 2000; Ştefan 2006; *A. lanceolata* – Pop 1959	HD Per.	Hygrophilous – Hydrophilous (Ciocârlan 1988, 1990)	Watersides, marshes (Ciocârlan 1988, 1990)		
***Sagittaria latifolia* Willd.**	Flora XI	H Per.	Hygrophilous – Hydrophilous (Ciocârlan 1988, 1990)	Waters, stagnant waters (Ciocârlan 1988, 1990)		
Butomaceae						
***Butomus umbellatus* L.**	Guşuleac 1933; Prodan 1956; Bucur 1957a; Răvăruț 1968; Dobrescu	H Per.	Hygrophilous – Hydrophilous (Ciocârlan 1988, 1990)	Stagnant waters (Ciocârlan 1988, 1990)	1. 120, 200, 785 2. 85, 120, 305	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1973; Grigore 1978; Popescu 1981; Ştefan 1995b; Ştefan 2001b; Ştefan 2006					
			Hydrocharitaceae			
***Hydrocharis morsus – ranae* L.**	Guşuleac 1933; Popescu 1963	HD Per.		Stagnant waters, flowing waters (Ciocârlan 1988, 1990)		
***Stratiodes aloides* L.**	Guşuleac 1933; Popescu 1963	H Per.	Hydrophilous (Ciocârlan 1988, 1990)	Stagnant waters, lakes (Ciocârlan 1988, 1990)		
***Vallisneria spiralis* L.**	Prodan 1939	HD Per.	II categ. (Prodan 1939)			
			Juncaginaceae			
***Triglochin maritima* L.** (Fig. 98)	Prodan 1922; Guşuleac 1933; Csuros 1947; Flora XI; Doltu 1979; Pop 1980; Doltu 1984; Mititelu 1988; Pop 1988;	H Per.	I categ. (Prodan 1939); Obligatory Halophyte (Țopa 1954); Hygrohalophyte (Ciocârlan 1988, 1990)	Marshy salinized meadows (Ciocârlan 1988, 1990)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Ciocârlan 1994; Ciocârlan 2000; Sârbu 2001; *T. maritimum* L. – Schur 1885; Bujorean 1934; Prodan 1939; Țopa 1939; Țopa 1954; Csuros 1961; Pall 1964; Csuros-Kaptalan 1965; Csuros 1970; Cristurean 1973; Samú 1982; Pop 1983; Popescu 1984; Todor 1947; *T. maritima* L. f. *elata* Nutt – Doltu 1983; *T. maritimus* - Sanda 1990a; Sanda 1990b;					
T. palustre L. (Fig. 99)	Prodan 1922; Prodan 1939; Țopa 1939; Țopa 1954; Bucur 1957a; Bucur	H Per.	III categ. (Prodan 1939); Preferential Halophyte (Țopa 1954);	Regularly associates with *P. maritima* and *Aster tripolium*;	1. 270, 360, 430 2. 80, 170, 240	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1961; Flora XI; Csuros-Kaptalan 1965; Bucur 1966; Țopa 1969; Mititelu 1971b; Pătraşcu 1973; Mititelu 1975b; Doltu 1979; Sanda 1984; Ciocârlan 2000; *T. palustris* L. – Răvăruț 1968; Popescu 1973; Ivan 1978; Doltu 1983; Doltu 1984; Sanda 1991; Ciocârlan 1994; Pop 2000; Sârbu 2001		Neohalophyte (Bucur 1961); Mesohygrophilous – hygrophilous (Ciocârlan 1988, 1990)	grows in wet meadows, sandy and less salinized. When soil is rich in sand, it strongly develops, because it has shallow roots, thus deeply penetrating the soil surface (Prodan, 1922)		
Potamogetonaceae						
***Potamogeton pussilus* L.** em. Fieber	Guebhard 1848; Grecescu 1898; Flora XI; Ciocârlan 2000; Sârbu 2001	HD Per.		Stagnant salinized waters (Ciocârlan 1988, 1990)		
? *P. marinus*	Schur 1885; Prodan 1922					
P. crispus L.	*P. crispum* – Țopa	HD		Stagnant waters		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1969	Per.		(Ciocârlan 1988, 1990)		
P. pectinatus L.	Sanda 1969; Mititelu 1971c; *P. pectinatus* L. var. *interruptus* Kit. – Prodan 1922; Prodan 1939; *P. pectinatus* L. – Pax 1919; Mititelu 1987; *P. pectinatus* L. var. *scoparius* Wallr. – Todor 1947	HD Per.	II categ. (Prodan 1939)	Stagnant waters (Ciocârlan 1988, 1990)	Can endures sea water (Prodan, 1922)	
			Ruppiaceae			
***Ruppia cirrhosa* (Petagna) Grande**	Ciocârlan 2000; Sârbu 2001	HD Per.				
R. maritima L. (Fig. 100)	Ciocârlan 1994; Ciocârlan 2000; Sârbu 2001; *R. rostellata* W. D. J. Koch. – Brandza 1879 – 1883; Grecescu 1898;	HD Per.	I categ. (Prodan 1939)	Marine waters, salt lakes (Ciocârlan 1988, 1990)	Completely immersed in clear stagnant salty (marine or lacustrine) waters (Prodan, 1922)	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Sch. Cent I 1921; Prodan 1922; Prodan 1939; Flora XI; *R. rostelata* W. D. J. Koch ssp. *obliqua* – Prodan 1939; *R. rostellata* Koch var. *transsilvanica* (Schur) Soo – Todor 1947					
Najadaceae						
***Najas marina* L.** (Fig. 101)	Prodan 1922; Prodan 1939; Flora XI; Ciocârlan 1994; Ciocârlan 2000; Sârbu 2001	TH Ann.	II categ. (Prodan 1939); Hydrophilous (Ciocârlan 1988, 1990)	Stagnant or less flowing fresh or saline waters (Ciocârlan 1988, 1990)		
M. minor All. (Fig. 102)	Prodan 1922; Prodan 1939; Flora XI; Mititelu 1975; Ciocârlan 1994; Sanda 1969; Mititelu 1971c;	TH Ann.	II categ. (Prodan 1939); Hydrophilous (Ciocârlan 1988, 1990)	Stagnant or less flowing fresh or saline waters (Ciocârlan 1988, 1990)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Ciocârlan 2000; Sârbu 2001					
			Zannichelliaceae			
***Zannichellia palustris* L.** (Fig. 103)	Burduja 1939; Prodan 1939; Flora I; Mititelu 1971c; Mititelu 1987; Ciocârlan 1994; Ciocârlan 2000; Sârbu 2001; *Z. major* Boeningh ap. Rchb. – Grecescu 1898); ssp. *pedicellata* (Wahlenb. & Rosén) Arcang. – Prodan 1922; *Z. pedicellata* (Wahlenb. & Rosén) Fr. – Csuros 1947; *Z. palustris* L. ssp. *pedicellata* (Wahlemb. Et	HD Per.	I categ. (Prodan 1939)	Stagnant or less flowing fresh or saline waters (Ciocârlan 1988, 1990)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Rosen) Hegi f. *aculeata* (Schur) A. u. G. – Todor 1947; *Z. pedicellata* (Wahlenb. & Rosén) Fr. var. *aculeata* Schur – Burduja 1939					
? *Z. acuta*	Prodan 1939		I categ. (Prodan 1939)			
			Zosteraceae			
***Zostera marina* L.** (Fig. 104)	Grecescu 1898; Sch. Cent X 1931; Prodan 1939; Ciocârlan 2000	HD Per.	I categ. (Prodan 1939)	In sea water, sea shore, littoral lakes (Ciocârlan 1988, 1990)		
Z. noltii Hornem. (Fig. 105)	Cic. 2000; *Z. nana* Roth pro parte – Prodan 1939	HD Per.	I categ. (Prodan 1939)	In sea water, sea shore, littoral lakes (Ciocârlan 1988, 1990)		
			Liliaceae			
***Anthericum ramosum* L.**	Rusu 1972	H Per.	Xeromesophilous, Oligotrophic (Ciocârlan 1988, 1990)			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
***Colchicum autumnale* L.**	Prodan 1939; Şerbănescu 1965; Sanda 1978	G Per.	III categ. (Prodan 1939); Mesophilous – Mesohygrophilous (Ciocârlan 1988, 1990)			
***Gagea villosa* (M. Bieb.) Sweet**	*Gagea arvensis* (Pers.) Dumort – Şerbănescu 1965	G Per.	Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)			
G. minima (L.) Ker. Gawl.	Bucur 1957a, b	G Per.	Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)			
***Scilla autumnalis* L.**	Grecescu 1898; Pax 1919; Prodan 1922; Prodan 1939; Şerbănescu 1965; Flora XI ; Ciocârlan 2000	G Per.	II categ. (Prodan 1939); Mesophilous, Facultative halophyte (Ciocârlan 1988, 1990)	More or less salinized meadows (Ciocârlan 1988, 1990); regarded by many authors as a calciphilous plant, it grows in lower salinized plains (Prodan, 1922)		
Asparagus	Ciocârlan 2000; *A.*	G	II categ. (Prodan	Wet, salinized		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
***brachyphyllus* Turcz.**	*pallasii* Miscz. – Flora XI; Sârbu 2001; *A. trihcophyllus* auct. Ross., non Bunge – Prodan 1922; Prodan 1939	Per.	1939); Mesohalophyte (Ciocârlan 1988, 1990)	maritime sands (Ciocârlan 1988, 1990)		
A. officinalis L.	Hacquet 1790-96; Bucur 1957a; Bucur 1961; *A. officinalis* L. var. *flexuosa* – Prodan 1939	G Per.	II categ. (Prodan 1939); Neohalophyte (Bucur 1961); Xeromesophilous (Ciocârlan 1988, 1990)		1. 56, 80, 274 2. 85, 110, 1670	
***Allium vineale* L.** (Fig. 106)	Prodan 1922; Prodan 1939; Prodan 1956; Flora XI; Ciocârlan 2000; Sârbu 2001	G Per.	II categ. (Prodan 1939); Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)	Sometimes on salinized areas (Ciocârlan 1988, 1990); it grows in sandy, sun-exposed areas, but sometimes prefers salinized clay soils (Prodan, 1922); it occurs as rare,		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
				isolated individuals in less salinized areas, in patches covered by abundant vegetation (Grigore, pers. obs.)		
A. oleraceum L.	Bucur 1957a	G Per.	Xeromesophilous, subtermophilic (Ciocârlan 1988, 1990)		1. 52, 80, 120 2. 60, 105, 305	
A. angulosum L.	Țopa 1954; Bucur 1957a; Bucur 1961; Flora XI	G Per.	Accidental Halophyte (Țopa 1954); Mesophilous – Mesohygrophilous (Ciocârlan 1988, 1990)	Wet often marshy meadows (Ciocârlan 1988, 1990)	1. 35, 60, 200 2. 40, 85, 100	
A. scordoprasum L.	Bucur 1957a	G Per.	Xeromesophilous – mesophilous (Ciocârlan 1988, 1990)			
A. rotundum L.	Bucur 1957a; Răvăruț 1968	G Per.	Xeromesophilous (Ciocârlan 1988,		1. 75, , 95 2. 110, , 115	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
			1990)			
A. sphaerocephalon L.	*A. sphaerocephalum* – Şerbănescu 1965	G Per.	Oligotrophic, subtermophilic (Ciocârlan 1988, 1990)			
A. paniculatum L.	Mititelu 1987	G Per.				
A. fuscum Waldst. et. Kit.	*A. pallens* L. – Guebhard 1848	G Per.				
***Ornithogalum orthophyllum* Ten.**	Ciocârlan 1994; *O. kochii* Parl. – Mititelu 1978-1980; *Ornithogalum tenuifolium* Guss. – Prodan 1922; Prodan 1939; *O. gussoneanum* – Şerbănescu 1965; *O. gussonei* auct. Eur. Medit., non Ten. – Pop 1959; Mititelu 1975b; Flora XI; Pop 2000	G Per.	II categ. (Prodan 1939)			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
			Iridaceae			
***Iris spuria* L.**	Schur 1885; Prodan 1939; Țopa 1954; Flora XI; Ciocârlan 2000; Sârbu 2001	G Per.	I categ. (Prodan 1939); Preferential Halophyte (Țopa 1954); Mesohygrophilous halophyte (Ciocârlan 1988, 1990)	Wet, less salinized meadows (Ciocârlan 1988, 1990)		
I. halophila Pall. (Fig. 107)	Prodan 1939; Țopa 1939; Răvăruț 1941; Țopa 1954; Bucur 1960a; Mititelu 1965; Flora XI; Mititelu 1967; Răvăruț 1968; Mititelu 1971a; Doltu 1979; Doltu 1984; Popescu 1984; Sanda 1990b; Burac 1997; Ciocârlan 2000; Pop 2000; Sârbu 2001	G Per.	II categ. (Prodan 1939); Obligatory Halophyte (Țopa 1954); Euhalophyte (Bucur 1960a); Mesohalophyte – Mesohygrophilous halophyte (Ciocârlan 1988, 1990)	1. 45, 70, 515 2. 70, 170, 1860	Perennial, mesophilous, mesothermophile, heliophilous, less alkaliphilous, from less to strongly halophylous; it develops on salinized water meadows, exposed to drought in the summer, but wet and even	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
					flooded in the spring (Bucur, 1960a). This species has a strong rhizome, assuring it to survive during the flooding (Grigore and Toma, 2010b).	
I. brandzae Prodan	Prodan 1939; Țopa 1939; Țopa 1954; Bucur 1957a; Bucur 1961; Ghișa 1969; Mititelu 1975b; Ciocârlan 2000	G Per.	II categ. (Prodan 1939); Supporting Halophyte (Țopa 1954); Neohalophyte (Bucur 1961)	Wet salinized meadows (Ciocârlan 1988, 1990)	1. 55, , 140 2. 110, , 620	
I. germanica L.	Antohe 1986	G Per.				
I. sibirica L.	Schur 1885; Prodan 1939	G Per.	II categ. (Prodan 1939); Mesohygrophilous (Ciocârlan 1988, 1990)			
I. pseudacorus L.	Prodan 1939; Țopa 1954; Bucur 1957a;	G Per.	III categ. (Prodan 1939); Accidental		1. 130, 150, 460 2. 90, 120, 170	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Bucur 1961; Grigore 1971; Mihai 1977; Grigore 1978; Ştefan 2001b; Ştefan 2006		Halophyte (Țopa 1954); Neohalophyte (Bucur 1961); Hygrophilous (Ciocârlan 1988, 1990)			
I. pumilla L.	Prodan 1939; Țopa 1954; *I. binata* Schur. – Flora XI	G Per.	III categ. (Prodan 1939); Supporting Halophyte (Țopa 1954); Xeromesophilous, Oligotrophic, subtermophilic (Ciocârlan 1988, 1990)			
I. graminea L.	Guşuleac 1933; Bucur 1957a	G Per.	Xeromesophilous – mesophilous (Ciocârlan 1988, 1990)			
I. sintenisii Janka	Ciocârlan 1972; Mititelu 1975b; *I. sintenisii* ssp. *salina* – Mititelu 1978-1980	H Per.				

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
			Orchidaceae			
***Orchis morio* L.**	Samú 1982; Pop 2000; *O. morio* L., f. *albiflorus* Lindiger, f. *albicans* Lindiger – Todor 1947	G Per.	Oligotrophic, Xeromesophilous – mesophilous (Ciocârlan 1988, 1990)			
Orchis laxiflora Lam. ssp. *elegans* (Heuff.) Sóo	Mititelu 1978-1980; *O. elegans* Heuff. – Csuros 1970; Samú 1982; *Orchis palustris* Jacq. – Prodan 1939; Țopa 1954; Şerbănescu 1965; Mititelu 1971b;	G Per.	III categ. (Prodan 1939); Supporting Halophyte (Țopa 1954); Mesohygrophilous (Ciocârlan 1988, 1990);			This species has been erroneously mentioned in confusion to *O. laxiflora* Lam. ssp. *elegans* (Heuff.) Soó (Ciocarlan, 2009)
			Juncaceae			
***Luzula campestris* (L.) DC.**	Pop 1959; Rusu 1972; Pop 2000	H Per.	Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990			
***Juncus hybridus* Brot.**	Ciocârlan 2000	TH Ann.		Wet salinized habitats		It not grows in Romania;

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
				(Ciocârlan 1988, 1990		previously mentioned in our country (Ciocârlan 2009).
J. acutus L. (Fig. 108)	Prodan 1939; Flora XI; Popescu 1973; Popescu 1975; Popescu 1976; Doltu 1979; Sanda 1990a; Sanda 1991; Pop 2000; *J. acutus* L. ssp. *littoralis* – Pop 2000		I categ. (Prodan 1939)			
J. bufonius L.	Prodan 1922; Prodan 1939; Țopa 1954; Flora XI; Csuros 1968; Țopa 1969; Rusu 1972; Pătraşcu 1973; Popescu 1976; Ciocârlan 2000; Sârbu 2001	TH Ann.	III categ. (Prodan 1939); Supporting Halophyte (Țopa 1954); Mesohygrophilous (Ciocârlan 1988, 1990	Wet, sandy, sometimes salinized places (Ciocârlan 1988, 1990		
J. compressus	Prodan 1922;	G	II categ. (Prodan	Wet, sometimes		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
Jacq. (Fig. 109)	Prodan 1923; Guşuleac 1933; Prodan 1939; Răvăruţ 1941; Pop 1959; Csuros 1961; Csuros-Kaptalan 1965; Flora XI; Mihai 1969; Mihai 1972; Ştefan 1995b; Ciocârlan 2000; Pop 2000	Per.	1939); Mesohygrophilous., Facultative halophyte (Ciocârlan 1988, 1990)	salinized meadows (Ciocârlan 1988, 1990		
J. gerardi Loisel. (Fig. 110)	Fuss 1866; Schur 1885; Grecescu 1898; Prodan 1922; Prodan 1923; Prodan 1939; Ţopa 1939; Sch. Cent. XIX- XXI 1949; Răvăruţ 1941; Todor 1947; Ţopa 1954; Popescu 1957b; Samoilă 1957; Bucur 1960a; Samoilă 1960;	G Per.	I categ. (Prodan 1939); Preferential Halophyte (Ţopa 1954, Andrei 1965); Euhalophyte (Bucur 1960a); Mesohygrophilous halophyte (Ciocârlan 1988, 1990)	Wet, salinized meadows, sands (Ciocârlan 1988, 1990); perennial, common, hygrophilous, mesothermophile to subtermophile, heliophilous, from less to strongly halophytic; it develops on	1. 75, 120, 1380 2. 65, 500, 2370	A species classified as "amphibious halophyte" (Grigore and Toma, 2010b, d) based on the presence of bulliform cells.

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Bujorean 1961; Csuros 1961; Andrei 1962; Popescu 1963; Borza 1964; Teşu 1964; Andrei 1965; Csuros-Kaptalan 1965; Mititelu 1965; Bucur 1966; Borza 1966; Popescu-Domogled 1966; Bucur 1967; Mititelu 1967; Păun 1967; Flora XI; Răvăruț 1968; Mihai 1969; Mititelu 1969; Țopa 1969; Csuros 1970; Turenschi 1970; Mititelu 1971a; Mititelu 1971b; Mihai 1972; Mititelu 1972; Rusu 1972; Dobrescu 1973; Pătraşcu			salinized humic gley soils, indicating a permanent wet saline soil (Bucur, 1960a). A species occuring only in wet saline areas, sometimes flooded; it has well developed aerenchyma at rhizome level (Grigore and Toma, 2010b).		

Species	**Authors with cited species/Synonyms**	**Life form**	**Halophyte type/ecological type**	**Habitat / Ecological spectrum**	**Salinity tolerance** **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	**Others**
	1973; Sanda 1973; Mititelu 1975; Mititelu 1975b; Popescu 1975; Popescu 1976; Mihai 1977; Pop 1977; Sanda 1977; Grigore 1978; Ivan 1978; Sanda 1978; Doltu 1979; Mititelu 1978-1980; Pop 1980; Popescu 1981; Samú 1982; Pop 1983; Popescu 1984; Sanda 1984; Mititelu 1987; Popescu 1987; Mititelu 1988; Pop 1988; Sanda 1990a; Sanda 1990b; Sanda 1991; Sanda 1992; Sârbu 1995a; Ştefan 1995a; Ştefan 1995b; Burac					

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1997; Ciocârlan 2000; Pop 2000; Sârbu 2000; Sârbu 2001; Ştefan 2001a; Ştefan 2002; Ştefan 2006; *J. gerardi* Loisel., var. *ponticus* (Stev.) A. et G. – Doltu 1983; *J. gerardi* Loisel. var. *salsuginosus* Buchen. – Doltu 1984					
J. maritimus Lam. (Fig. 111)	Prodan 1922; Prodan 1939; Sch. Cent. XIX- XXI 1949; Ţopa 1954; Guşuleac 1962; Popescu 1973; Sanda 1973; Doltu 1979; Popescu 1987; Sanda 1990a; Sanda 1992; Sârbu 1995a; Sârbu 1995b; Ştefan	G (H) Per.	I categ. (Prodan 1939); Preferential Halophyte (Ţopa 1954); Mesohygrophilous – Hygrophilous, Obligatory Halophyte (Ciocârlan 1988, 1990)	Marshy, salinized meadows (Ciocârlan 1988, 1990)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1995a; Ciocârlan 2000 ; Pop 2000; Sârbu 2000; *J. maritimus* Lam. var. *ponticus* (Stev.) A. et G. – Doltu 1983					
J. littoralis C.A. Mey.	Sanda 1992; Sârbu 1995b; Ciocârlan 2000; Sârbu 2000; Sârbu 2001; *J. acutus* L. ssp. *tommasini* – Prodan 1939; Doltu 1983; *J. acutus* L. ssp. *tyraicus* Pacz – Doltu 1983	H Per.	Xeromesophilous – Mesohalophyte (Ciocârlan 1988, 1990)			
J. inflexus L.	Flora XI; Csuros-Kaptalan 1965; Răvăruț 1968; Mititelu 1987; Ştefan 2002; *J. glaucus* Sibth. – Popescu 1963	H Per.	Mesohygrophilous (Ciocârlan 1988, 1990)	Meadows, marshes (Ciocârlan 1988, 1990)		
J. effusus L.	Prodan 1956; Pop 1959; Popescu	H Per.	Mesohygrophilous (Ciocârlan 1988,			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1963; Răvăruț 1968; Mihai 1972		1990)			
J. conglomeratus L. em. Leers	Prodan 1956; Pop 1959; Samú 1982	H Per.	Mesohygrophilous (Ciocârlan 1988, 1990)	Marshy meadows (Ciocârlan 1988, 1990)		
J. atratus Krock.	Popescu 1976; Samú 1982	H Per.	Mesohygrophilous (Ciocârlan 1988, 1990)			
J. tenuis Willd.	Țopa 1969	G Per.	Mesohygrophilous (Ciocârlan 1988, 1990)			
J. squarrosus L.	Guebhard 1848					
Cyperaceae						
***Schoenoplectus littoralis* (Schrad.) Palla**	Ciocârlan 2000	G (H) Per.	Hygrophilous, Termophile, Facultative halophyte (Ciocârlan 1988, 1990)			
S. lacustris (L.) Palla	Prodan 1922; Prodan 1939; Bucur 1957a; Şerbănescu 1965; Boşcaiu	G (H) Per	II categ. (Prodan 1939); Eutrophic, Hygrophilous (Ciocârlan 1988,		1. 420, 500,1220 2. 520, 980, 1240	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1966; Răvăruț 1968; Turenschi 1970; Cîrțu 1977; Grigore 1978; Sârbu 1995a; Ştefan 1995b; Pop 2000; Sârbu 2000; *Scirpus lacustris* L. – Guşuleac 1933; Ştefan 2006		1990)			
S. tabernaemontani (C. C. Gmel.) Palla	Schur 1885; Bujorean 1934; Prodan 1939; Ciurchea 1962b; Popescu 1963; Csuros-Kaptalan 1965; Csuros-Kaptalan, Péterfi 1966; Flora XI; Răvăruț 1968; Grigore 1971; Mititelu 1971b; Mihai 1972; Popescu 1973; Popescu 1976;	G (H) Per.	II categ. (Prodan 1939); Eutrophic, Hygrophilous, Facultative halophyte (Ciocârlan 1988, 1990)			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Doltu 1979; Samú 1982; Mititelu 1987; Ştefan 1995b; Pop 2000; Sârbu 2000; Sârbu 2001; Ştefan 2001b					
***Bolboschoenus maritimus* (L.) Palla** (Fig. 112)	Sch. Cent. XII-XIV 1934; Prodan 1939; Csuros 1947; Bucur 1957a; Bucur 1961; Andrei 1962; Ciurchea 1962b; Popescu 1963; Csuros-Kaptalan 1965; Şerbănescu 1965; Flora XI; Bucur 1966; Boşcaiu 1966; Csuros-Kaptalan 1966; Răvăruț 1968; Mihai 1969; Țopa 1969; Csuros 1970; Turenschi 1970; Grigore 1971; Mititelu 1971b;	G (H) Per.	II categ. (Prodan 1939); Preferential Halophyte (Țopa 1954); Neohalophyte (Bucur 1961); Mesohygrophilous, Facultative halophyte (Ciocârlan 1988, 1990)		1. 255, 345, 645 2. 240, 300, 345	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Mihai 1972; Mititelu 1972; Dobrescu 1973; Popescu 1973; Mititelu 1975; Mititelu 1975b; Popescu 1976; Mihai 1977; Pop 1977; Grigore 1978; Ivan 1978; Doltu 1979; Sanda 1980; Popescu 1981; Samú 1982; Popescu 1984; Sanda 1984; Mititelu 1987; Popescu 1987; Sanda 1990b; Sanda 1991; Ciocârlan 1994; Sârbu 1995a; Sârbu 1995b; Ştefan 1995a; Ştefan 1995b; Pop 2000; Sârbu 2000; Sârbu					

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	2001; Ştefan 2006; *Scirpus maritimus* L. – Schur 1885; Ţopa 1939; Ţopa 1954; Prodan 1956; Ştefan 2001b; Ştefan 2002					
***Scirpoides holoschoenus* (L.) Soják**	Pax 1919; *Scirpus holoschoenus* L. – Grecescu 1898; *Holoschoenus vulgaris* Link f. *australis* – Prodan 1939; *H. vulgaris* Link – Popescu 1973; Popescu 1975; Popescu 1976; Sanda 1991; Sârbu 2000	G Per.	II categ. (Prodan 1939); Mesophilous – Hygrophilous, Psammophyte, subtermophilic (Ciocârlan 1988, 1990)	Continental sands, maritime dunes (Ciocârlan 1988, 1990)		
***Eleocharis uniglumis* (Link.) Schult.** (Fig. 113)	Mititelu 1988; Ciocârlan 1994; Ştefan 1995b; Ciocârlan 2000; Ştefan 2006; *Heleocharis*	G (H) Per.	II categ. (Prodan 1939); Mesohygrophilous – Hygrophilous, Facultative halophyte	Marshes, sometimes salinized (Ciocârlan 1988, 1990)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	uniglumis (Link.) Schult. - Prodan 1939; Doltu 1979		(Ciocârlan 1988, 1990)			
E. palustris (L.) Roem. et Schult. (Fig. 112)	Mititelu 1987; Mititelu 1988; Sanda 1991; Coste 1993; Ştefan 1995b; Burac 1997; Pop 2000; Ştefan 2001b; Ştefan 2002; Ştefan 2006; *Heleocharis palustris* (L.) R. Br. – Prodan 1922; Prodan 1923; Guşuleac 1933; Prodan 1939; Țopa 1954; Prodan 1956; Bucur 1957a; Samoilă 1957; Pop 1959; Csuros 1961; Andrei 1962; Popescu 1963; Andrei 1965; Şerbănescu 1965; Păun 1967;	G (H) Per.	II categ. (Prodan 1939); Supporting Halophyte (Țopa 1954, Andrei 1965); Hygrophilous (Ciocârlan 1988, 1990)	It grows in marshy places and arround more or less salinized lakes; when salt concentration is higher, it remains smaller (Prodan, 1922).	1. 75, 150, 80 2. 55, 100, 1760	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Răvăruț 1968; Mititelu 1969; Țopa 1969; Csuros 1970; Schneider-Binder 1970; Grigore 1971; Mititelu 1971b; Rusu 1972; Mititelu 1975b; Cîrțu 1977; Mihai 1977; Grigore 1978; Doltu 1979; Samú 1982;					
E. parvula (Roem. et Schult.) Link ex Bluff, Ness et Schauer	Sanda 1991; Ciocârlan 1994; *Heleocharis parvula* (Roem. & Schult.) – Flora XI	H Per.				
***Cladium mariscus* (L.) Pohl**.	Prodan 1939	G Per.	III categ. (Prodan 1939); Eutrophic – Mesotrophic, Hygrophilous (Ciocârlan 1988, 1990)	Marshes (Ciocârlan 1988, 1990)		
Cyperus	Țopa 1939; Țopa	TH	III categ. (Prodan			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
***flavescens* L.**	1954; Mititelu 1987; *Pycreus flavescens* (L.) Rchb. – Prodan 1939	Ann.	1939); Accidental Halophyte (Ţopa 1954); Mesohygrophilous (Ciocârlan 1988, 1990)			
C. pannonicus Jacq. (Fig. 115)	Schur 1885; Grecescu 1898; Pax 1919; Şerbănescu 1965; Ciocârlan 1994; Ştefan 1995b; Ciocârlan 2000; Sârbu 2001; Ştefan 2001b; *Acorellus pannonicus* (Jacq.) Palla – Prodan 1922; Prodan 1939; Flora XI; Popescu 1976; Ivan 1978; Doltu 1979; Popescu 1981; Popescu 1984; Sanda 1984; Sanda 1990b; Sanda 1991; Pop 2000; *Pycreus*	TH Ann.	I categ. (Prodan 1939); Oligotrophic, Mesohygrohalophilous (Ciocârlan 1988, 1990)	Wet, salinized sands (Ciocârlan 1988, 1990); It occurs in temporary waters and drained marshes, muddy places and areas flooded during the spring (Prodan, 1922).		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	pannonicus Rchb. – Fuss 1866					
C. fuscus L.	Țopa 1939; Țopa 1954; Mititelu 1987; Pop 2000	TH Ann.	Accidental Halophyte (Țopa 1954); Mesohygrophilous (Ciocârlan 1988, 1990)			
***Carex stenophylla* Wahlenb.**	Flora XI; Ciocârlan 1994; Ciocârlan 2000; Sârbu 2001	G Per.	Oligotrophic, Xeromesophilous, Facultative halophyte (Ciocârlan 1988, 1990)	Dry places, wet, salinized meadows (Ciocârlan 1988, 1990)		
C. divisa Huds.	Prodan 1922; Prodan 1939; Țopa 1954; Andrei 1962; Şerbănescu 1965; Flora XI; Mititelu 1971a; Ciocârlan 1972; Mititelu1975b; Popescu 1976; Doltu 1979; Mititelu 1978-1980;	G Per.	II categ. (Prodan 1939); Preferential Halophyte (Țopa 1954); Hygrophilous, Facultative halophyte (Ciocârlan 1988, 1990)	Marshy meadows, sometimes sandy salinized habitats (Ciocârlan 1988, 1990); Very common in salinized environments. It prospers where soil is less		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Popescu 1984; Sanda 1991; Ciocârlan 1994; Ciocârlan 2000; Sârbu 2001			flooded, but rich in soluble salts. It has a very strong rhizome, and grows both in clay and sandy soil (Prodan, 1922)		
C. hordeistichos Vill.	Prodan 1939; Țopa 1939; Țopa 1954; Flora XI; Mititelu 1971b; Mititelu 1975b; Ciocârlan 2000; Sârbu 2001	H Per.	II categ. (Prodan 1939); Preferential Halophyte (Țopa 1954); Mesohygrophilous (Ciocârlan 1988, 1990)	Wet, sometimes salinized habitats (Ciocârlan 1988, 1990)		
C. secalina Willd. ex Wahlenb.	Prodan 1939; Flora XI; Mititelu 1971a; Doltu 1979; Ciocârlan 1994; Ciocârlan 2000; Sârbu 2001	H Per.	II categ. (Prodan 1939); Mesohygrophilous, Facultative halophyte (Ciocârlan 1988, 1990)	Wet, salinized meadows (Ciocârlan 1988, 1990)		
C. melanostachya Willd	Pop 1959; Răvăruț 1968; Mititelu 1971b ; Dobrescu	G Per.	Neohalophyte (Bucur 1961); Mesohygrophilous –		1. 210, 230, 270 2. 560, 650, 680	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1973; Mihai 1977; Grigore 1978; Popescu 1984; Sanda 1991; Ciocârlan 1994; Ciocârlan 2000; Pop 2000; *C. nutans* Host – Guşuleac 1933; Bucur 1957a; Pop 1959; Bucur 1961; Guşuleac 1962; Bucur 1966		Hygrophilous, Facultative halophyte (Ciocârlan 1988, 1990)			
C. extensa Gooden.	Prodan 1922; Prodan 1939; Țopa 1954; Flora XI; Sanda 1973; Popescu 1976; Doltu 1979; Sanda 1990a; Ciocârlan 1994; Sârbu 1995a; Ştefan 1995a; Ştefan 1995b; Ciocârlan 2000; Pop 2000; Sârbu 2000; Sârbu 2001;	H Per.	II categ. (Prodan 1939); Obligatory Halophyte (Țopa 1954); Hygrohalophyte (Ciocârlan 1988, 1990)	Salt marshes, sands (Ciocârlan 1988, 1990)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Ştefan 2001a; Ştefan 2001b; Ştefan 2002					
C. distans L. (Fig. 116)	Prodan 1922; Prodan 1939; Ţopa 1939; Csuros 1947; Ţopa 1954; Bucur 1957a; Andrei 1962; Popescu 1963; Csuros-Kaptalan 1965; Şerbănescu 1965; Bucur 1966; Borza 1966; Flora XI; Răvăruţ 1968; Mititelu 1969; Ţopa 1969; Csuros 1970; Turenschi 1970; Mititelu 1971b; Mihai 1972; Rusu 1972; Popescu 1973; Popescu 1975; Mititelu 1975; Mititelu 1975b; Sanda 1978;	H Per.	II categ. (Prodan 1939); Preferential Halophyte (Ţopa 1954); Mesohygrophilous, Facultative halophyte (Ciocârlan 1988, 1990)	Wet, often salinized meadows (Ciocârlan 1988, 1990); Wet, salinized clay and sometimes in less sandy soils (Prodan, 1922); This species is confined to wet salinized areas, sometimes exposed even to flooding but in summer it can be very dry, when plan tis subjected to water stress (Grigore, pers. obs.)	1. 90, 110, 280 2. 95, 100, 235	An *amphibious* halophyte, with bulliform cells located on lamina level (Grigore and Toma, 2010b, 2010d)

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Doltu 1979; Mititelu 1978-1980; Samú 1982; Pop 1980; Mititelu 1987; Mititelu 1988; Sanda 1990a; Sanda 1991; Ciocârlan 1994; Ştefan 1995a; Ştefan 1995b; Ciocârlan 2000; Pop 2000; Sârbu 2001; Ştefan 2002; Ştefan 2006					
C. vulpina L.	Guşuleac 1933; Csuros 1947; Todor 1947; Prodan 1956; Pop 1959; Bucur 1961; Şerbănescu 1965; Răvăruț 1968; Mihai 1969; Csuros 1970; Turenschi 1970; Mititelu 1971b; Mihai 1972; Mihai	H Per.	Neohalophytes (Bucur 1961); Mesohygrophilous – Hygrophilous (Ciocârlan 1988, 1990)	Marshy meadows (Ciocârlan 1988, 1990)	1. 80, 95, 375 2. 60, 90, 610	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1977; Pop 2000; Sârbu 2001					
C. otrubae Podp.	Sârbu 2001	H Per.	Mesohygrophilous – Hygrophilous (Ciocârlan 1988, 1990)	Marshy meadows (Ciocârlan 1988, 1990)		
C. caryophyllea Latourr.	Pop 1959; Sanda 1991; Coste 1993; *C. praecox* Schreb. – Bucur 1957a; Bucur 1957a, b; Pop 1959; Şerbănescu 1965; Sanda 1991; Coste 1993; Pop 2000	G Per.	Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)		1. 53, 75, 292 2. 60, 85, 950	
C. acuta L.	*C. gracilis* Curtis – Popescu 1963; Şerbănescu 1965	G Per	Mesohygrophilous – Hygrophilous (Ciocârlan 1988, 1990)			
C. hirta L.	Sch. Cent. XIX-	G	Mesophilous –			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	XXI 1949; Csuros-Kaptalan 1965; Şerbănescu 1965; Răvăruț 1968; Pop 1969a ; Pop 2000	Per.	Mesohygrophilous (Ciocârlan 1988, 1990)			
C. riparia Curtis	Csuros-Kaptalan 1965; Răvăruț 1968; Dobrescu 1973; Mihai 1977; Grigore 1978; Mititelu 1987; Pop 2000; Ştefan 2001b;	G Per.	Hygrophilous (Ciocârlan 1988, 1990)			
C. acutiformis Ehrh.	Pop 1959; Răvăruț 1968; Grigore 1978; Mititelu 1987; Ciocârlan 1994; Burac 1997; Pop 2000; Ştefan 2006	G Per.	Hygrophilous (Ciocârlan 1988, 1990)			
C. rostrata Stokes	Ştefan 2006	H Per.	Hygrophilous (Ciocârlan 1988, 1990)			
C. elata All.	Sârbu 2000; Ştefan 2006; *C. hudsonii* Bennet – Popescu 1963	H Per.	Hygrophilous (Ciocârlan 1988, 1990)			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	Others
C. *spicata* Huds.	*C. contigua* Hoppe – Popescu 1963	H Per.	Mesophilous (Ciocârlan 1988, 1990)			
			Poaceae			
Festuca pulchra **Schur** (Fig. 117)	*Festuca pseudovina* Hack. ex Wiesb. - Prodan 1922; Prodan 1923; Isăcescu 1939; Csuros 1947; Țopa 1954; Bucur 1957a, b; Popescu 1957; Samoilă 1957; Popescu 1957 b; Pop 1959; Samoilă 1960; Bucur 1961; Bujorean 1961; Csuros 1961; Crişan 1962; Popescu 1963; Andrei 1965; Csuros-Kaptalan 1965; Flora XII; Popescu-Domogled 1966; Mititelu	H Per.	II categ. (Prodan 1939); Supporting Halophyte (Țopa 1954, Andrei 1965); Neohalophyte (Bucur 1961); Xeromesophilous (Ciocârlan 1988, 1990)	Salinized meadows (Ciocârlan 1988, 1990); it prefers warm, sun-exposed places, on clay and sandy soils (Prodan, 1922)	1. 15, 55, 160 2. 25, 50, 445	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	Others
	1971a; Mihai 1972; Rusu 1972; Sanda 1978; Sanda 1978; Pop 1980; Pop 1983; Popescu 1984; Sanda 1984; Mititelu 1987; Pop 1988; Sanda 1990b; Sanda 1991; Coste 1993; Ciocârlan 1994; Ciocârlan 2000; Pop 2000; Sârbu 2001; *F. pseudovina* var. *rutila* – Prodan 1939; Prodan 1956; *F. pseudovina* var. *salina* – Mititelu 1965; Sanda 1991; *F. pseudovina* ssp. *salina* – Mititelu 1975b; Mititelu 1978-1980					
F. arundinacea Schreb.	Prodan 1939; Csuros 1947;	H Per.	II categ. (Prodan 1939); Euhalophyte		1. 75, 115, 230 2. 215, 360, 1605	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Prodan 1956; Bucur 1960a; Popescu 1963; Şerbănescu 1965; Răvăruț 1968; Csuros 1970; Turenschi 1970; Mititelu 1971 ; Mihai 1972; Pătraşcu 1973; Doltu 1979; Ciocârlan 1994; Ştefan 1995b		(Bucur 1960a); Mesotrophic, Mesohygrophilous (Ciocârlan 1988, 1990)			
F. pratensis Huds.	Bujorean 1934; Prodan 1939; Csuros 1947; Bucur 1957a; Pop 1959; Csuros-Kaptalan 1965; Şerbănescu 1965; Csuros 1970; Mihai 1972; Samú 1982	H Per.	III categ. (Prodan 1939); Mesophilous – Mesohygrophilous, Eutrophic – Mesotrophic (Ciocârlan 1988, 1990)		1. 45, 55, 140 2. 50, 65, 120	
F. valesiaca Schleich. ex Gaudin	Şerbănescu 1965; Răvăruț 1968; Turenschi 1970; Pop 2000	H Per.	Xerophilous – Xeromesophilous, Subtermophilic (Ciocârlan 1988,			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
			1990)			
F. rupicola Heuff.	Csuros 1947; Prodan 1956; Pop 1959; Popescu 1963; *F. sulcata* var. *pseudovina* Hack. – Guşuleac 1933; *F. sulcata* – Samoilă 1957	H Per.	Xeromesophilous (Ciocârlan 1988, 1990)			
***Vulpia myuros* (L.) C. C. Gmel.**	Prodan 1939; Buia 1959; Popescu 1963; *Festuca myuros* L. – Prodan 1922	TH Ht	II categ. (Prodan 1939); Oligotrophic, Xeromesophilous, Subtermophilic (Ciocârlan 1988, 1990)			
***Lolium perenne* L.**	Prodan 1923; Prodan 1939; Todor 1947; Prodan 1956; Bucur 1957a; Popescu 1957; Samoilă 1957; Buia 1959; Pop 1959; Samoilă 1960; Bucur 1961; Popescu 1963; Pall	H Per.	III categ. (Prodan 1939); Neohalophyte (Bucur 1961); Mesophilous (Ciocârlan 1988, 1990)		1. 45, 85, 265 2. 30, 85, 490	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1964; Csuros-Kaptalan 1965; Şerbănescu 1965; Boşcaiu 1966; Bucur 1967; Răvăruț 1968; Mihai 1969; Pop 1969a; Ivan 1978; Pop 1980; Pop 1983; Coste 1993; Burac 1997; Pop 2000					
L. rigidum Gaudin ssp. *lepturoides* (Boiss.) Sennen & Mauricio	*L. loliaceum* (Bory & Chaub.) Hand. – Mazz. – Ciocârlan 1994	TH Ann.		Maritime sands (Ciocârlan 1988, 1990)		
***Poa bulbosa* L.**	Prodan 1922; Prodan 1923; Prodan 1939; Bucur 1957a; Popescu 1957; Samoilă 1957; Buia 1959; Căzăceanu 1959; Pop 1959; Samoilă	H Per.	III categ. (Prodan 1939); Supporting Halophyte (Țopa 1954, Andrei 1965); Neohalophyte (Bucur 1961); Xeromesophilous (Ciocârlan 1988,		1. 30, 65, 980 2. 40, 80, 2120	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1960; Bucur 1961; Csuros 1961; Andrei 1962; Crişan 1962; Turenschi 1964; Mititelu 1965; Şerbănescu 1965; Bucur 1966; Răvăruț 1968; Turenschi 1970; Mititelu 1971a; Mihai 1972; Mititelu 1972; Dobrescu 1973; Cîrțu 1977; Sanda 1978; Popescu 1984; Mititelu 1987; Sanda 1990b; Sanda 1991; Coste 1993; Pop 2000; Sârbu 2000; *P. bulbosa* L. var. *vivipara* – Isăcescu 1939; Țopa 1954; Bucur 1957a, b; Popescu 1957;		1990)			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Popescu 1957 b; Bujorean 1961; Popescu 1963; Andrei 1965; Pătraşcu 1973; Sanda 1991					
P. annua L.	Prodan 1922; Prodan 1939; Țopa 1954; Bujorean 1961; Şerbănescu 1965; Pop 1969a; Sanda 1978; Sanda 1984	TH-H Ann.-Per.	III categ. (Prodan 1939); Accidental Halophyte (Țopa 1954); Mesophilous (Ciocârlan 1988, 1990)			
P. palustris L.	Prodan 1923; Bucur 1957a; Samoilă 1957; Boşcaiu 1966; Răvăruț 1968; Grigore 1978	H Per.	Mesohygrophilous (Ciocârlan 1988, 1990)	Marshy meadows (Ciocârlan 1988, 1990)	1. 140, 170, 240 2. 65, 140, 645	
P. compressa L.	Prodan 1956; Bucur 1957a; Bucur 1966; Pop 1969a	H Per.	Xeromesophilous, Calciphilous (Ciocârlan 1988, 1990)		1. 15, 50, 235 2. 25, 55, 265	
P. trivialis L.	Prodan 1956; Bucur 1957a; Popescu 1963; Şerbănescu	H Per.	Mesohygrophilous (Ciocârlan 1988, 1990)	Marshy, wet meadows (Ciocârlan 1988,	1. 90, 105, 160 2. 80, 100, 110	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1965; Mihai 1977; Pop 2000			1990)		
P. sylvicola Guss.	Popescu 1963; Şerbănescu 1965; Pop 2000	H Per.	Mesohygrophilous, Subtermophilic (Ciocârlan 1988, 1990)	Wet meadows, watersides (Ciocârlan 1988, 1990)		
P. pratensis L.	Samoilă 1960; Crişan 1962; Popescu 1963; Şerbănescu 1965; Bucur 1967; Răvăruț 1968; Mihai 1969; Turenschi 1970; Mihai 1972; Sanda 1978; Pop 1980; Popescu 1984; Sanda 1991; Coste 1993; Burac 1997	H Per.	Neohalophyte (Bucur 1961); Mesophilous – Mesohygrophilous, Mesotrophic – Eutrophic (Ciocârlan 1988, 1990)			
Poa angustifolia L.	Prodan 1923; Sanda 1978; Sanda 1984; *P. pratensis* L. var. *angustifolia* (L.) Hay - Bucur 1957a; Bucur 1961	H Per.	Xeromesophilous – Mesophilous, Oligotrophic (Ciocârlan 1988, 1990)		1. 42, 65, 150 2. 45, 80, 390	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
***Puccinellia distans* (L.) Parl.**	Sch. Cent. XVII-XVIII 1938; Țopa 1939; Răvăruț 1941; Todor 1947; Țopa 1954; Dobrescu 1957; Samoilă 1957; Moşneagă 1958; Buia 1959; Căzăceanu 1959; Pop 1959; Bucur 1960a, b; Csuros 1961; Andrei 1962; Ciurchea 1962b; Guşuleac 1962; Popescu 1963; Flora XII; Teşu 1964; Andrei 1965; Csuros-Kaptalan 1965; Mititelu 1965; Şerbănescu 1965; Bucur 1966; Bucur 1967; Mititelu 1967; Sanda 1967;	H Per.	I categ. (Prodan 1939); Preferential Halophyte (Țopa 1954, Andrei 1965); Euhalophyte (Bucur 1960a); Mesophilous – Mesohygrohalophilo us (Ciocârlan 1988, 1990)	Perennial, hygrophilous to mesophilous, mesothermophile , heliophilous, strongly alkaliphilous; it develops on wet salinized areas, resistant to flooding (Bucur, 1960a); a hygrohalophyte (Grigore, pers. obs.), vegetating mainly in wet salinized areas.	1. 70, 320, 1300 2. 60, 520, 5420	Classified as "amphibious halophyte", especially on the basis of bulliform cells (Grigore and Toma, 2010b, d); *Puccinellia* genus is problematic (Ciocarlan, 2009) and this could explain the large diversity of subspecies and forms and sometimes the tendency to make synonyms between *P. distans* and *P. limosa* (see

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Răvăruț 1968; Dihoru 1969; Dobrescu 1969; Mihai 1969; Mititelu 1969; Turenschi 1964; Pop 1969a; Țopa 1969; Csuros 1970; Turenschi 1970; Mititelu 1971a; Popescu 1971; Mititelu 1972; Rusu 1972; Dobrescu 1973; Pătrașcu 1973; Mititelu 1975; Mititelu 1975b; Mihai 1977; Pop 1977; Sanda 1977; Ivan 1978; Doltu 1979; Mititelu 1978-1980; Samú 1982; Doltu 1983; Pop 1983; Popescu 1984; Sanda 1984; Antohe					next paragraphs).

Species	**Authors with cited species/Synonyms**	**Life form**	**Halophyte type/ecological type**	**Habitat / Ecological spectrum**	**Salinity tolerance** **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	**Others**
	1986; Mititelu 1987; Mititelu 1988; Sanda 1990a; Sanda 1991; Ciocârlan 1994; Sârbu 1995b; Ştefan 1995b; Ciocârlan 2000; Pop 2000; Sârbu 2000; Sârbu 2001; *P. distans* (L.) ssp. *limosa* (Schur) Jáv. – Prodan 1939 ; Pall 1964; Ştefan 2001a; Ştefan 2002; *Atropis distans* (L.) Griseb. – Schur 1885; Pax 1919; Sch. Cent I 1921; Guşuleac 1933; Țopa 1935; Prodan 1956; Popescu 1957; Popescu 1957b; Bujorean 1961; Crişan 1962;					

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Popescu 1963; Popescu – Domogled 1966; *Gliceria distans* Boiss. – Isăcescu 1939); *P. distans* (L.) Parl. sp. *dstans* - Doltu 1984; *P. dstans* ssp *pseudobulbosa*, *P. dstans* ssp. *pocera* – Prodan 1939; *P. dstans* var. *limosa* – Samoilă 1960					
P. limosa (Schur.) Holmb.	Răvăruț 1941; Csuros 1947; Țopa 1939; Țopa 1954; Flora XII; Csuros 1961; Păun 1967; Csuros 1970; Mititelu 1971a; Mihai 1972; Dobrescu 1973; Popescu 1973; Popescu 1975;	H Per.	Obligatory Halophyte (Țopa 1954); Mesohalophyte (Ciocârlan 1988, 1990)	Salinized meadows (Ciocârlan 1988, 1990)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Popescu 1976; Sanda 1978; Doltu 1979; Sanda 1979; Mititelu 1978-1980; Pop 1980; Popescu 1981; Doltu 1983; Pop 1983; Popescu 1984; Sanda 1984; Mititelu 1987; Popescu 1987; Pop 1988; Sanda 1990a; Sanda 1990b; Sanda 1991; Sanda 1992; Coste 1993; Ciocârlan 1994; Ştefan 1995a; Burac 1997; Pop 2000; Sârbu 2000; Sârbu 2001; Ştefan 2001b; *P. limosa* f. *pallens* – Ţopa 1969; *A. transilvanica* Schur. – Prodan 1956					
P. convoluta	Isăcescu 1939;	H	Obligatory			

Species	**Authors with cited species/Synonyms**	**Life form**	**Halophyte type/ecological type**	**Habitat / Ecological spectrum**	**Salinity tolerance** **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	**Others**
(Hornem.) Hayek	Țopa 1954; Mititelu 1971a; Cîrțu 1977; Doltu 1983; Mititelu 1987; Ciocârlan 1994; Sârbu 1995a; Sârbu 1995b; Ştefan 1995b; Pop 2000; Sârbu 2001; *P. convoluta* (Hornem.) Hayek ssp. *pseudobulbosa* (Nyár.) Borza – Ciocârlan 2000; *P. convoluta* (Hornem.) Hayek var. *pseudobulbosa* - Andrei 1962	Per.	Halophyte (Țopa 1954); Mesohygrohalophilous (Ciocârlan 1988, 1990)			
P. intermedia (Schur) Holmb	Sârbu 1995a; Ciocârlan 2000; Sârbu 2001; *Puccinellia festuciformis* (Host) Parl. ssp. *intermedia* (Schur)	H Per.	I categ. (Prodan 1939); Mesohalophyte (Ciocârlan 1988, 1990)	Salinized meadows		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	W. E. Hughes – Prodan 1939; *P. festuciformis* ssp. *minor* – Prodan 1939; *P. transsilvanica* (Schur) Jáv. Nom. Invalid. – Prodan 1939; Todor 1947; Flora XII; Cristurean 1973; Doltu 1983; *P. festuciformis* – Pop 2000; *P. festuciformis* (Host.) Parl., *P. convoluta* (Hornem.) Hayek var. *pseudobulbosa* Nyár – Doltu 1984; *Atropis intermedia* Schur – Schur 1885; *P. convoluta* (Hornem) Hayek p.p. – Flora X					

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
P. gigantea (Grossh.) Grossh.	Ciocârlan 1994; Ciocârlan 2000; Sârbu 2000	H Per.	Mesohyrohalophilous (Ciocârlan 2000)			
P. poecilantha (K. Koch.) Grossh.	Ciocârlan 1994					Mentioned from Delta Dunarii (Ciocârlan 2009)
***Sclerochloa dura* (L.) P. Beauv.**	Prodan 1922; Prodan 1939; Bucur 1957a; Popescu 1957 b; Buia 1959; Bujorean 1961; Şerbănescu 1965; Mititelu 1987	TH Ann.	III categ. (Prodan 1939); Xeromesophilous (Ciocârlan 1988, 1990)		1. 35, , 125 2. 80, , 680	
***Beckmannia eruciformis* (L.) Host** (Fig. 118)	Pax 1919; Prodan 1922; Guşuleac 1933; Prodan 1939; Ţopa 1939; Prodan 1956; Popescu 1957; Popescu 1957 b; Samoilă 1957; Pop 1959; Popescu 1963;	H Per.	II categ. (Prodan 1939); Preferential Halophyte (Ţopa 1954); Euhalophyte (Bucur 1960a); Mesohygrohalophilous (Ciocârlan 1988, 1990)	Marshy meadows, wet and salinized habitats (Ciocârlan 1988, 1990); it grows on the border of less salinized stagnant waters;	1. 100, 120, 810 2. 70, 90, 875	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Flora XII; Teşu 1964; Şerbănescu 1965; Păun 1967; Răvăruț 1968; Dobrescu 1969; Mititelu 1971a; Dobrescu 1973; Nedelcu 1973; Mititelu 1975; Mititelu 1975b; Seghedin 1977; Doltu 1979; Samú 1982; Doltu 1983; Popescu 1984; Mititelu 1987; Sanda 1991; Ciocârlan 1994; Ciocârlan 2000; Pop 2000; Sârbu 2001; *B. erucaeformis* – Țopa 1954; Bucur 1960a; *B. eruciformis* (L.) Host. f. *vivipara*			also vegetates in salinized small depressions, dried, but flooded in the spring. Its height varies with environmental conditions: in less salinized areas, it grows vigorously, and in lower places (where salinity is higher), the plants are smaller (Prodan, 1922).		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Morariu – Doltu 1984					
***Catabrosa aquatica* (L.) Beauv.**	Prodan 1922; Prodan 1939; Bucur 1957a; Bucur 1961; Şerbănescu 1965; Răvăruț 1968	H Per.	II categ. (Prodan 1939); Neohalophyte (Bucur 1961); Mesohygrophilous – Hygrophilous (Ciocârlan 1988, 1990)	Marshes (Ciocârlan 1988, 1990); frequent in marshy places, but also can grow in less salinized areas (Prodan, 1922).	1. 90, , 240 2. 80, , 200	
***Glyceria maxima* (Hartm.) Holmb.**	Mihai 1977; Grigore 1978; Mititelu 1987; Ştefan 2006; *Glyceria aquatica* (L.) Wahlenb., non (L.) J. Presl & C. Presl. – Bucur 1957a; Bucur 1961; Popescu 1963; Răvăruț 1968	H h-h Per.	Neohalophyte (Bucur 1961); Hygrophilous (Ciocârlan 1988, 1990)		1. 95, 120, 810 2. 65, 110, 945	
G. notata Chevall.	*G. plicata* (Fr.) Fr. – Prodan 1956; Bucur 1957a; Bucur 1961	H h-h Per.	Neohalophyte (Bucur 1961)		1. 75, , 275 2. 110, , 120	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
G. fluitans (L.) R. Br.	Pop 1959; Popescu 1963; Răvăruț 1968; Mititelu 1971b; Nedelcu 1973; Sanda 1991; Todor 1947; Pop 2000	H h-h Per.	Hygrophilous (Ciocârlan 1988, 1990)			
***Bromus commutatus* Schrad.**	Prodan 1939; Sch. Cent. XXII-XXIII; Bucur 1957a; Csuros 1961; Şerbănescu 1965; Bucur 1966; Mihai 1972; Mihai 1977; Pop 2000	TH-Ht Ann.	III categ. (Prodan 1939); Mesophilous (Ciocârlan 1988, 1990)		1. 36, 100, 280 2. 45, 160, 1020	
B. hordeaceus L.	Prodan 1922; Şerbănescu 1965; Sanda 1984; Sanda 1991; Coste 1993; *B. hordaceus*. f. *nanus* – Prodan 1939; *B. mollis* L. – Bucur 1957a; Pop 1959; Bucur 1961; Bujorean 1961;	TH-Ht Ann.	III categ. (Prodan 1939); Neohalophyte (Bucur 1961); Mesophilous (Ciocârlan 1988, 1990)	It grows in salinized meadows, especially on their borders, where can develop better; towards the center of saline area, it became	1. 35, 120, 770 2. 45, 260, 2010	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Csuros 1961; Popescu 1963; Mititelu 1971a; Rusu 1972; Pop 1980; Pop 2000; Sârbu 2000; Sârbu 2003			smaller (Prodan, 1922)		
B. japonicus Thumb.	Prodan 1939; Prodan 1956; Turenschi 1964; Bucur 1967	TH-Ht Ann.	III categ. (Prodan 1939); Xeromesophilous (Ciocârlan 1988, 1990)			
B. tectorum L.	Prodan 1939; Şerbănescu 1965; Rusu 1972; Popescu 1981; Sanda 1984; Sanda 1990b; Sârbu 2000; Sârbu 2003	TH Ann.	III categ. (Prodan 1939); Xerophilous – Xeromesophilous, Termophile – subtermophilic (Ciocârlan 1988, 1990)	Sometimes, a ruderal plant, but often occurs in salinized meadows, eliminating others graminaceous species (Prodan, 1922)		
B. arvensis L.	Bucur 1957a; Bucur 1957a, b; Samoilă 1957;	TH, Ht Ann	Xeromesophilous (Ciocârlan 1988, 1990)		1. 35, 95, 290 2. 40, 95, 1380	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Samoilă 1960; Bucur 1966; Samú 1982; Coste 1993					
B. inermis Leyss.	Bucur 1957a; Bucur 1961; Samú 1982	H Per.	Neohalophyte (Bucur 1961); Xeromesophilous (Ciocârlan 1988, 1990)		1.40, 75, 240 2. 45, 75, 345	
B. squarrosus L.	Prodan 1956; Bucur 1957a; Popescu 1957; Bucur 1961; Popescu 1963; Şerbănescu 1965; Rusu 1972; Sanda 1984	TH-Ht Ann.	Neohalophyte (Bucur 1961); Xerophilous, Termophile (Ciocârlan 1988, 1990)		1. 35, 80, 460 2. 25, 100, 770	
B. sterilis L.	Mititelu 1972; Rusu 1972	TH Ann.	Xeromesophilous (Ciocârlan 1988, 1990)			
***Leymus sabulosus* (M. Bieb.) Tzvelev**	*Elymus sabulosus* Bieb. – Ciocârlan 1994; Sârbu 1995a	G Per.				
***Elymus elongatus* (Host) Runemark** (Fig. 119)	Doltu 1984; Ştefan 2001a; *Agropyron elongatum* (Host.) Beauv. – Prodan	H Per.	II categ. (Prodan 1939)	More or less salinized meadows, maritime sands	1. 20, 80, 1210 2. 20, 90, 2200	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1939; Flora XII; Andrei 1962; Şerbănescu 1965; Sanda 1978; Doltu 1979; Doltu 1983; Popescu 1984; Sanda 1984; Sanda 1990b; Sanda 1991; Ciocârlan 1994; Sârbu 1995a; Ştefan 1995b; Pop 2000; Sârbu 2001; *Agropyrum elongatum* P. Beauv. – Prodan 1922; Sârbu 1995b			(Ciocârlan 1988, 1990)		
E. repens (L.) Gould	Ştefan 2002; *Agppyron repens* (L.) P. Beauv. – Prodan 1939; Csuros 1947; Bucur 1957a,b; Popescu 1957; Buia 1959; Samoilă 1960; Bucur 1961; Crişan		III categ. (Prodan 1939); Neohalophyte (Bucur 1961)			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1962; Popescu 1963; Pall 1964; Turenschi 1964; Mititelu 1965; Şerbănescu 1965; Bucur 1966; Bucur 1967; Mihai 1969; Mititelu 1969; Turenschi 1970; Mititelu 1971a; Mihai 1972; Popescu 1975; Popescu 1976; Mititelu 1972; Cîrțu 1977; Mititelu 1978-1980; Samú 1982; Pop 1983; Mititelu 1987; Sanda 1991; Coste 1993; Burac 1997; Pop 2000; *Agropyron repens* (L.) Pal. Beauv. f. *subulatum* (Schreb.) Rchb., var.					

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	trichosum Morariu, var. *caesium* Presl. – Todor 1947; *Agropyrum repens* L. f. *dumetorum* Schrb. – Prodan 1922; Prodan 1939; *A. repens* x *glaucum* - Prodan 1939; *Agropyrum repens* – Prodan 1923; Samoilă 1957; Samoilă 1960; Teşu 1964; Răvăruț 1968; Rusu 1972; Pătraşcu 1973					
E. farctus (Viv.) Runemark ex Melderis	*Agropyron junceum* (L.) P. Beauv. – Prodan 1922; Prodan 1939; Sârbu 1995a; *A. junceum* (L.) P. Beauv. var. *sartorii* Boiss et Heldr., var. *junceum*, var.	G Per.	II categ. (Prodan 1939)	Maritime sands (Ciocârlan 1988, 1990)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	bessarabicum – Doltu 1983					
E. hispidus (Opiz) Melderis	*Agropyron intermedium* (Host.) P. Beauv. – Bucur 1957a; Mititelu 1987; *Agropyrum intermedium* Beauv – Guşuleac 1933; *Agropyrum salinum* Schur. – Fuss 1866	G Per.	Xeromesophilous, Subtermophilic (Ciocârlan 1988, 1990)		1. 30, , 110 2. 30, , 210	
E. athericus (Link.) Kerguélen	*Agropyron pycnanthus* (Godr.) Melderis – Ciocârlan 1994; Ştefan 1995b; *Agropyron litorale* Dumort., nom illeg. – Doltu 1983	G Per.				
***Agropyron cristatum* (L.) Gaertn.**	Isăcescu 1939; Bucur 1957a; Bucur 1957a, b; Bucur 1961; Bucur 1967; Mihai 1969; Turenschi 1970;	H Per.	Oligotrophic, Xerophilous, Termophile (Ciocârlan 1988, 1990)		1. 10, 55, 285 2. 35, 65, 1380	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Dobrescu 1973; *A. pectiniforme* Roem. & Schult. – Ciocârlan 1972; Pop 2000; *Agropyrum cristatum* – Răvăruț 1968					
A. orientalis (L.) Roem. Et Schult.	*Eremopyrum orientale* (L.) Jaub. & Spach - Sârbu 2001	TH Ann		Sandy, less salinized soils (Ciocârlan 1988, 1990)		
? *Agropyron prostratum*	Prodan 1939; Țopa 1939; *Agropyrum prostratum* – Țopa 1954		I categ. (Prodan 1939); Preferential Halophyte (Țopa 1954)			
***Hordeum geniculatum* All.**	Ciocârlan 2000; *H. hystrix* Roth. – Popescu 1957; Popescu 1957 b; Samoilă 1957; Buia 1959; Pop 1959; Bujorean 1961; Crişan 1962; Popescu 1963;	TH Ann.	Xero – Mesohalophyte (Ciocârlan 1988, 1990)	Dry, ruderalized, less salinized meadows (Ciocârlan 1988, 1990)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Borza 1966; Popescu-Domogled 1966; Păun 1967; Mititelu 1971a; Mititelu 1975; Sanda 1978; Doltu 1979; Popescu 1984; Sanda 1984; Sanda 1990b; Sanda 1991; Coste 1993; Ciocârlan 1994; Sârbu 1995a; Sârbu 2001; Ştefan 2002; Sârbu 2003					
H. marinum Huds.	Flora XII; Popescu 1976; Pop 1977; Doltu 1983; Popescu 1984; Ciocârlan 1994; Ciocârlan 2000; Sârbu 2001; *H. maritimum* Stokes. – Fuss 1866; Brandza 1879-1883; Schur 1885;	TH Ann.	I categ. (Prodan 1939); Preferential Halophyte (Ţopa 1954, Andrei 1965)	More or less salinized and ruderalized meadows (Ciocârlan 1988, 1990). It grows in clay sun-exposed soils; prefers areas free of vegetation, less salinized and		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Brandza 1898; Prodan 1922; Prodan 1939; Țopa 1954; Andrei 1965; Şerbănescu 1965; Dihoru 1969; Popescu 1971; Pătraşcu 1973; Popescu 1975; Doltu 1979; Popescu 1984; Sanda 1991; *H. marinum* ssp. *gussoneanum* (Parl.) Asch, & Graebn. – Prodan 1939; Ivan 1978; Mititelu 1978-1980; *H. marinum* ssp. *hystrix* – Sanda 1984; *H. marinum* ssp. *marinum* – Pop 2000; *H. gussoneanum* Parl. – Prodan 1923;			sometimes can endure habitats less flooded (Prodan, 1922)		

Species	**Authors with cited species/Synonyms**	**Life form**	**Halophyte type/ecological type**	**Habitat / Ecological spectrum**	**Salinity tolerance** **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	**Others**
	Prodan 1956; Şerbănescu 1965					
H. jubatum L.	Ciocârlan 1994; Ciocârlan 2000; Sârbu 2001	H Per.		Wet salinized meadows (Ciocârlan 1988, 1990)		
H. secalinum Schreb.	Doltu 1984; Ciocârlan 2000; *H. pratense* Huds., *H. nodosum* auct. Non L. – Flora X	H Per.		Wet salinized meadows (Ciocârlan 1988, 1990)		
H. murinum L.	Todor 1947; Bucur 1957a; Guşuleac 1962; Pop 1969; Sanda 1984; Sârbu 2003	TH Ann.	Xeromesophilous (Ciocârlan 1988, 1990)		1. 40, , 70 2. 55, , 85	
***Ventenata dubia* (Leers) Coss.**	Prodan 1956; Popescu 1957; Samoilă 1957; Buia 1959; Popescu 1963; Coste 1993; Pop 2000	TH Ann.	Xeromesophilous (Ciocârlan 1988, 1990)			
***Koeleria macrantha* (Ledeb.) Schult.**	*Koeleria gracilis* Pers. – Prodan 1956; Bucur 1957a;	H Per.	Neohalophyte (Bucur 1961); Xeromesophilous			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Pop 1959; Bucur 1961; Popescu 1963; Răvăruț 1968; *K. cristata* (L.) Pers. Pro parte – Sanda 1978; Pop 2000		(Ciocârlan 1988, 1990)			
***Anthoxanthum odoratum* L.**	Şerbănescu 1965; Samú 1982; Pop 2000	H Per.	Oligotrophic, Mesophilous (Ciocârlan 1988, 1990)			
***Zinigeria pisidica* (Boiss.) Tutin**	Sanda 1991; *Agrostis pisidica* Boiss. – Buia 1959; Pop 2000; *Agrostis densior* Hack. Ex Grecescu – Şerbănescu 1965; Dihoru 1969	TH Ann.				
***Agrostis stolonifera* L.** (Fig. 120)	Bucur 1957a; Bucur 1961; Popescu 1963; Andrei 1965; Şerbănescu 1965; Mihai 1972; Mititelu 1972; Rusu	H Per.	III categ. (Prodan 1939); Supporting Halophyte (Țopa 1954, Andrei 1965); Neohalophyte (Bucur 1961);	Wet, often marshy meadows (Ciocârlan 1988, 1990); wet , salinized meadows	1. 65, 120, 640 2. 50, 120, 850	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1972; Dobrescu 1973; Sanda 1973; Pătraşcu 1973; Mititelu 1975b; Cîrțu 1977; Mihai 1977; Pop 1977; Doltu 1979; Mititelu 1978-1980; Pop 1980; Popescu 1981; Samú 1982; Popescu 1984; Mititelu 1987; Pop 1988; Sanda 1991; Ştefan 1995b; Coste 1993; Sârbu 1995a; Burac 1997; Pop 2000; Sârbu 2000; Ştefan 2001b; Ştefan 2002; Sârbu 2003; Ştefan 2006; *Agrostis alba* L. – Prodan 1922; Guşuleac 1933; Bujorean 1934; Prodan 1939;		Mesohygrophilous – Hygrophilous (Ciocârlan 1988, 1990)	(Prodan, 1922)		

Species	**Authors with cited species/Synonyms**	**Life form**	**Halophyte type/ecological type**	**Habitat / Ecological spectrum**	**Salinity tolerance** **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	**Others**
	Csuros 1947; Țopa 1954; Prodan 1956; Pop 1959; Csuros-Kaptalan 1965; Bucur 1966; Răvăruț 1968; Pop 1969a; Țopa 1969; Csuros 1970; Turenschi 1970; Mititelu 1971b; Nedelcu 1973; Mititelu 1975; *A. alba* var. *pontica* – Grecescu 1898; Prodan 1939					
? *A. prorepens*	Grecescu 1898					
A. gigantea Roth.	Ciocârlan 1994; Ciocârlan 2000; Sârbu 2001; *A. pontica* Grecescu – Popescu 1973; Sanda 1973; Popescu 1975; Popescu 1976; Doltu 1983; Sanda	H Per.				

Species	**Authors with cited species/Synonyms**	**Life form**	**Halophyte type/ecological type**	**Habitat / Ecological spectrum**	**Salinity tolerance** **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	**Others**
	1990a; Sanda 1990b; Sanda 1991; Sârbu 1995b; Ştefan 1995a; ssp. *gigantea,* ssp. *maeotica* (Klokov) Tzveler 1971, ssp. *pontica* (Grecescu) - Dihoru, 1980; Sârbu 1995a; Ştefan 1995b					
A. capillaris L.	*A. vulgaris* With. – Guşuleac 1933	H Per.	Oligotrophic – Mesotrophic, Mesophilous (Ciocârlan 1988, 1990)			
A. canina L.	Guşuleac 1933	H Per.				
A. moldavica Dobrescu et Beldie, 1970	Ciocârlan 1972	H (G) Per.				
? *A. limosa* Schur.	Fuss 1866					
Pholiurus	Prodan 1939;	TH	I categ. (Prodan	Wet salinized		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
***pannonicus* (Host) Trin.** (Fig. 121)	Popescu 1957; Popescu 1957 b; Samoilă 1957; Pop 1959; Flora XII; Bujorean 1961; Crişan 1962; Popescu 1963; Andrei 1965; Mititelu 1965; Şerbănescu 1965; Popescu – Domogled 1966; Dihoru 1969; Mititelu 1971a; Cîrțu 1977; Doltu 1979; Ardelean 1980; Doltu 1983; Doltu 1984; Popescu 1984; Sanda 1990b; Coste 1993; Ciocârlan 2000; Sârbu 2001; *Lepturus pannonicus* (Host.)	Ann.	1939); Preferential Halophyte (Andrei 1965); Mesohygrohalophilous (Ciocârlan 1988, 1990)	meadows (Ciocârlan 1988, 1990)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Kunth. – Prodan 1922; Isăcescu 1939; Prodan 1956					
Parapholis incurva **(L.) C. E. Hubb.**	Ciocârlan 1994; Ciocârlan 2000; *Pholiurus incurvus* (L.) Schinz et Thell- Pop 2000; *P. incurvatus* (L.) Hitchc. – Doltu 1983	Ann.		Sandy, salinized meadows (Ciocârlan 1988, 1990)		
Phragmites australis **(Cav.) Steud.**	Popescu 1973; Mihai 1977; Pop 1977; Grigore 1978; Mititelu 1978-1980; Popescu 1981; Mititelu 1987; Popescu 1987; Sanda 1991; Ştefan 1995b; Ştefan 2001b; Ciocârlan 2000; *P. australis* var. *flavescens* – Sârbu 1995a; *P. communis* f.	G h-h Per.	Hygrophilous (Ciocârlan 1988, 1990)	Marshes, stagnant shallow waters (Ciocârlan 1988, 1990)	1. 40, 95, 1380 2. 40, 120, 1820	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	rivularis – Prodan1939; Sanda 1984; *P. australis* (Cav.) Trin. Ex Steud. ssp. *humilis* – Ştefan 1995b; Sârbu 2001; Ştefan 2006; *P. communis* Trin. ssp. *humilis* (De not.) – Ciocârlan 1994 ; *P. communis* – Guşuleac 1933; Bujorean 1934; Csuros 1947; Ţopa 1954; Bucur 1957a, b; Popescu 1957 b; Samoilă 1957; Bucur 1961; Andrei 1962; Popescu 1963; Andrei 1965; Csuros-Kaptalan 1965; Şerbănescu 1965; Bucur 1966; Bucur 1967;					

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Răvăruț 1968; Mihai 1969; Țopa 1969; Turenschi 1970; Cristurean 1973; Dobrescu 1973; Pătraşcu 1973; Popescu 1976; Sanda 1977; Sanda 1978; Samú 1982; Sanda 1984; Pop 2000					
***Briza media* L.**	Prodan 1956; Samú 1982	H Per.	Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)			
***Molinia caerulea* (L.) Moench**	Țopa 1954; Flora X; Ciocârlan 1994; Ciocârlan 2000; Sâr bu 2001	H Per.	Oligotrophic, Mesohygrophilous – Hygrophilous (Ciocârlan 1988, 1990)	Wet marshy sometimes salinized soils (Ciocârlan 1988, 1990)		
***Aeluropus littoralis* (Gouan) Parl.** (Fig. 122)	Grecescu 1898; Prodan 1922; Sch. Cent. III 1923; Prodan 1939; Țopa 1954; Flora XII;	H Per.	I categ. (Prodan 1939); Obligatory Halophyte (Țopa 1954); Mesophilous –	It grows especially in wet sandy areas (Prodan, 1922)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Andrei 1962; Popescu 1973; Sanda 1973; Popescu 1975; Popescu 1976; Ivan 1978; Doltu 1979; Doltu 1983; Doltu 1984; Popescu 1984; Sanda 1984; Sanda 1990a; Sanda 1990b; Sanda 1992; Ciocârlan 1994; Sârbu 1995a; Sârbu 1995b; Ştefan 1995a; Ştefan 1995b; Ciocârlan 2000; Pop 2000; Sârbu 2000; Sârbu 2001; Ştefan 2001a; Ştefan 2001b; Ştefan 2002		Mesohygrohalophilous (Ciocârlan 1988, 1990)			
***Eragrostis pilosa* (L.) Beauv**	Brandza 1898; Prodan 1939; Ţopa 1954; Prodan 1956; Pop 1959; Popescu	TH Ann.	III categ. (Prodan 1939); Accidental Halophyte (Ţopa 1954);			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1963; Şerbănescu 1965; Coste 1993; Pop 2000; Sârbu 2001		Xeromesophilous (Ciocârlan 1988, 1990)			
E. minor Host	Prodan 1956; Samoilă 1957; Andrei 1962; Şerbănescu 1965; Sanda 1991; *E. poaeoides* P. Beauv.- Sanda 1984	TH Ann.	Xerophilous, Xeromesophilous (Ciocârlan 1988, 1990)			
***Polypogon monspeliensis* (L.) Desf.**	Țopa 1954; Pop 1977; Sârbu 1995a; Pop 2000; Sârbu 2000; Sârbu 2001; *Polypogon monspeliense* – Grecescu 1898; Prodan 1939; Popescu 1976	TH Ann.	I categ. (Prodan 1939); Supporting Halophyte (Țopa 1954)			
***Calamagrostis epigeios* (L.) Roth**	Țopa 1954; Bucur 1957a; Samoilă 1957; Bucur 1961; Samú 1982	G Per.	Accidental Halophyte (Țopa 1954); Neohalophyte (Bucur 1961)		1. 60, , 140 2. 70, , 170	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	Others
***Phleum pretense* L.**	Bucur 1957a ; Popescu 1957; Şerbănescu 1965	H Per.			1. 60, 80, 120 2. 65, 80, 210	
P. phleoides (L.) Karst	Samú 1982; *P. boehmeri* Wibel. – Bucur 1957a	H. Per.	Oligotrophic, Xerophilous - Xeromesophilous (Ciocârlan 1988, 1990)		1. 60, 115, 155 2. 65, 100, 145	
***Alopecurus arundinaceus* Poir.** (Fig. 123)	Ciocârlan 1994; Ciocârlan 2000; Sârbu 2000; Sârbu 2001; Ştefan 2001b; *A. ventricosus* Pers. – Ţopa 1954; Bucur 1957a; Bucur 1961; Şerbănescu 1965; Răvăruţ 1968; Turenschi 1970; Mihai 1972; Mititelu 1975; Doltu 1979; Mititelu 1987; Ştefan 1995b	H Per.	Preferential Halophyte (Ţopa 1954); Neohalophyte (Bucur 1961); Mesohygrophilous – Hygrophilous, Facultative halophyte (Ciocârlan 1988, 1990)	Marshy, sometimes salinized meadows (Ciocârlan 1988, 1990)	1. 280, 320, 475 2. 200, 220, 250	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
A. pratensis L. (Fig. 124)	Prodan 1922; Prodan 1923; Prodan 1939; Bucur 1957a; Popescu 1957; Samoilă 1957; Pop 1959; Bucur 1961; Flora XII; Samoilă 1960; Crişan 1962; Popescu 1963; Teşu 1964; Turenschi 1964; Şerbănescu 1965; Bucur 1966; Bucur 1967; Răvăruț 1968; Mihai 1969; Turenschi 1970; Sanda 1978; Doltu 1979; Samú 1982; Sanda 1991; Coste 1993; Burac 1997; Ciocârlan 2000	H Per.	III categ. (Prodan 1939); Neohalophyte (Bucur 1961); Mesohygrophilous, Facultative halophyte (Ciocârlan 1988, 1990)	Grows on wet, more or less salinized meadows, especially on their border (Prodan, 1922).	1. 15, 80, 320 2. 35, 85, 1605	
A. aequalis Sobol.	Prodan 1922; Prodan 1939; Popescu 1963;	TH-Ht Ann. – Bienn.	III categ. (Prodan 1939); Mesohygrophilous –			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Doltu 1979		Hygrophilous (Ciocârlan 1988, 1990)			
A. geniculatus L.	Prodan 1923; Bucur 1957a; Pop 1959; Bucur 1961; Bujorean 1961; Mihai 1969; Schneider-Binder 1970; Mititelu 1971a; Mititelu 1975; Mititelu 1975b; Doltu 1979; Mititelu 1988; Sanda 1991; Ciocârlan 1994; Ştefan 1995b; Pop 2000	TH H Ann. Bienn. Per.	Neohalophyte (Bucur 1961); Mesohygrophilous, Facultative halophyte (Ciocârlan 1988, 1990)		1. 80, 150, 390 2. 60, 120, 340	
? *A. litoralis*	Pax 1919					
***Phalaris arundinacea* L.**	Bucur 1957a; Dobrescu 1957; Bucur 1961; Mihai 1977	h-h Per.	Neohalophyte (Bucur 1961); Mesohygrophilous – Hygrophilous		1. 85, 110, 165 2. 40, 75, 100	
***Stipa capillata* L.**	Bucur 1957a	H Per.	Oligotrophic, xerophilous –		1. , 45, 2. , 75,	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	Others
			Xeromesophilous (Ciocârlan 1988, 1990)			
***Crypsis aculeata* (L.) Aiton** (Fig. 125)	Fuss 1866; Brandza 1879-1883; Schur 1885; Brandza 1898; Prodan 1922; Sch. Cent. VIII-IX 1928; Prodan 1939; Țopa 1939; Răvăruț 1941; Csuros 1947; Țopa 1954; Prodan 1956; Bucur 1960a; Flora XII; Csuros 1961; Andrei 1962; Andrei 1965; Csuros-Kaptalan 1965; Mititelu 1965; Şerbănescu 1965; Bucur 1966; Sanda 1967; Mihai 1969; Mititelu 1971a; Dobrescu 1973; Pătraşcu 1973; Sanda 1973;	TH Ann.	I categ. (Prodan 1939); Obligatory Halophyte (Țopa 1954, Andrei 1965); Euhalophyte (Bucur 1960a); Mesohalophyte – Mesohygrohalophilous (Ciocârlan 1988, 1990)	Wet salinized meadows (Ciocârlan 1988, 1990). Prefers clay or clay-sandy soils; individuals growing within other compact species have an erect position, long branches, and broader leaves, while those growing in patches free of vegetation, sun exposed have long prostrate branches (Prodan, 1922)	1. 120, 230, 230 2. 90, 160, 510	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Cîrțu 1977; Rudescu 1977; Ivan 1978; Doltu 1979; Doltu 1983; Popescu 1984; Sanda 1984; Sanda 1991; Coste 1993; Mititelu 1987; Sanda 1990b; Ciocârlan 1994; Sârbu 1995a; Ştefan 1995b; Ciocârlan 2000; Pop 2000; Sârbu 2001; Ştefan 2001b; Ştefan 2002; *C. aculeata* (L.) Aiton; f. *incrassata* Borza – Doltu 1984					
C. alopecuroides (Piller et Mitterp.) Schrad. (Fig. 126)	Țopa 1954; Samoilă 1957; Andrei 1965; Sanda 1991; Ciocârlan 1994; Ciocârlan 2000; Sârbu 2001;	TH Ann.	I categ. (Prodan 1939); Supporting Halophyte (Țopa 1954); Mesohygrophilous, Facultative	Wet, alluvial, sometimes salinized soils (Ciocârlan 1988, 1990)		

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance **1. measured on soil surface** **2. measured on the top of roots** **(% mg soluble salts)**	Others
	Heleochloa alopecuroides (Piller & Mitterp.) Host ex Roem.- Pax 1919; Prodan 1922; Prodan 1939; Prodan 1956; Buia 1959; Crişan 1962; Popescu 1963; Flora XII; Şerbănescu 1965; Pătraşcu 1973; Ardelean 1980; Doltu 1983; Mititelu 1987; Coste 1993; Pop 2000		halophyte (Ciocârlan 1988, 1990)			
C. schoenoides (L.) Lam. (Fig. 127)	Guebhard 1848; Brandza 1879–1883; Brandza 1898; Țopa 1939; Țopa 1954; Andrei 1965; Sanda 1991; Ciocârlan 1994; Ştefan 1995b;	TH Ann.	I categ. (Prodan 1939); Preferential Halophyte (Țopa 1954); Euhalophyte (Bucur 1960a); Mesohygrohalophilous (Ciocârlan 1988, 1990)	Wet, salinized habitats (Ciocârlan 1988, 1990)	1. 220, 260,1200 2. 140, 180,1580	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Ciocârlan 2000; Sârbu 2001; *Heleochloa schoenoides* (L.) Host- Prodan 1922; Prodan 1939; Răvăruț 1941; Prodan 1956; Bucur 1960a; Flora XII; Andrei 1965; Mititelu 1965; Şerbănescu 1965; Mihai 1969; Mititelu 1971a; Ciocârlan 1972; Dobrescu 1973; Pătraşcu 1973; Doltu 1979; Mititelu 1978-1980; Doltu 1983; Popescu 1984; Sanda 1984; Mititelu 1987; Coste 1993; Pop 2000; Ştefan 2001b					

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
***Cynodon dactylon* (L.) Pers.** (Fig. 128)	Pax 1919; Prodan 1922; Prodan 1939; Todor 1947; Țopa 1954; Prodan 1956; Bucur 1957a; Bucur 1957a,b; Popescu 1957; Popescu 1957 b; Samoilă 1957; Buia 1959; Samoilă 1960; Bucur 1961; Andrei 1962; Crişan 1962; Guşuleac 1962; Popescu 1963; Flora XII; Andrei 1965; Şerbănescu 1965; Răvăruț 1968; Turenschi 1970; Mititelu 1971a; Mititelu 1972; Rusu 1972; Pătraşcu 1973; Popescu 1973; Sanda 1973; Popescu 1975; Popescu 1976; Ivan	G Per.	III categ. (Prodan 1939); Supporting Halophyte (Țopa 1954, Andrei 1965) Neohalophyte (Bucur 1961); Xeromesophilous, subtermophilic, Facultative halophyte (Ciocârlan 1988, 1990)	More characteristic to sandy areas, where might be involved in soil' stabilization; it also occurs on the border of salty lakes and even more higher places (Prodan, 1922).	1. 25, 80, 265 2. 45, 90, 570	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1978; Sanda 1978; Popescu 1984; Sanda 1984; Mititelu 1987; Popescu 1987; Sanda 1990b; Sanda 1991; Coste 1993; Ciocârlan 1994; Sârbu 1995a; Ciocârlan 2000; Pop 2000; Sârbu 2000; Sârbu 2001; Sârbu 2003					
***Tragus racemosus* (L.) All.**	Şerbănescu 1965; Pop 1969b; Sanda 1984	TH Ann.	Xerophilous, Psammophyte, Termophile – Subtermophilic (Ciocârlan 1988, 1990)			
***Echinochloa crus – galli* (L.) Beauv.**	Prodan 1939; Todor 1947; Prodan 1956; Bucur 1957a; Bucur 1961; Popescu 1963; Şerbănescu 1965; Pătraşcu	TH Ann.	III categ. (Prodan 1939); Neohalophyte (Bucur 1961); Mesophilous – Mesohygrophilous,		1. 35, 65, 125 2. 180, 280, 370	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1973; Popescu 1976; Pop 1977; Ivan 1978; Sanda 1984; Mititelu 1987; Sanda 1991		hygrophilous (Ciocârlan 1988, 1990)			
E. oryzoides (Ard.) Fritsch	*E. macrocarpa* Vasinger – Popescu 1963; *E. oryzicola* Vasinger – Popescu 1963	TH Ann.				
***Setaria viridis* (L.) Beauv.**	Bucur 1957a; Bucur 1957a, b; Samoilă 1957; Şerbănescu 1965 ; Sanda 1984	TH Ann.	Xeromesophilous – Mesophilous (Ciocârlan 1988, 1990)		1. 20, 60, 130 2. 20, 110, 220	
S. pumilla (Poir.) Roem et Schult.	*S. glauca* auct., non (L.) P. Beauv. – Bucur 1957a; Samoilă 1957; Dobrescu 1973; Pop 2000	TH Ann.	Mesophilous – Mesohygrophilous (Ciocârlan 1988, 1990)		1. 25, , 65 2. 30, , 85	
***Dichanthium ischaemum* (L.) Roberty**	*Andropogon ischaemum* L. – Prodan 1922; Prodan 1939; Ţopa 1954; Popescu	H Per.	III categ. (Prodan 1939); Accidental Halophyte (Ţopa 1954, Andrei 1965);			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	1963; Andrei 1965; Csuros-Kaptalan 1965; Şerbănescu 1965; Mihai 1969; Sanda 1984; *Botriochloa ischaemum* (L.) Keng – Bucur 1957a, b; Bucur 1961		Neohalophyte (Bucur 1961); Oligotrophic, Xerophilous – Xeromesophilous, Subtermophilic (Ciocârlan 1988, 1990)			
? *Andropogon peisonis* Beck	Prodan 1923					
***Apera spica – venti* (L.) Beauv.**	Buia 1959; Sanda 1973; Popescu 1976; Sârbu 1995a; Sârbu 2001; ssp. *spica – venti,* ssp. *maritima* (Klokov) Tzvelev - Ciocârlan 1994; *Apera maritima* – Sârbu 1995b	TH Ann.	Xeromesophilous – Mesophilous, Calciphobous (Ciocârlan 1988, 1990)			

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
			Sparganiaceae			
Sparganium erectum **L.**	Bucur 1957a; Ştefan 2006; *S. ramosum* Huds. – Guşuleac 1933; Popescu 1963; Şerbănescu 1965; Răvăruț 1968; *S. erectum* L. ssp. *neglectum* – Mititelu 1987; *S. neglectum* – Ştefan 2001b	G (h-h) Per.	Hygrophilous (Ciocârlan 1988, 1990)		1. , , 380 2. , , 320	
			Typhaceae			
Typha angustifolia **L.**	Țopa 1954; Prodan 1956; Bucur 1957a; Popescu 1963; Răvăruț 1968; Popescu 1976; Mititelu 1987; Sârbu 1995a; Sârbu 2000; Ştefan 2001b; Ştefan 2006	G (h-h) Per.	Accidental Halophyte (Țopa 1954)	Stagnant waters (Ciocârlan 1988, 1990)	1. 285, , 385 2. 120, ,130	
T. latifolia L.	Guşuleac 1933; Bucur 1957a;	G (h-h)		Marshes, stagnant waters	1. 85, 125, 2. 110, 120,	

Species	Authors with cited species/Synonyms	Life form	Halophyte type/ecological type	Habitat / Ecological spectrum	Salinity tolerance 1. measured on soil surface 2. measured on the top of roots (% mg soluble salts)	Others
	Şerbănescu 1965; Ţopa 1969; Pop 1977; Mititelu 1987; Grigore 1971; Ştefan 2001b	Per.		(Ciocârlan 1988, 1990)		
T. laxmannii Lepech.	Sanda 1984; Sanda 199	G (h-h) Per.		Marshes (Ciocârlan 1988, 1990)		
T. shuttleworthii W. D. J. Koch et Sond.	Ţopa 1969	G (h-h) Per.		Marshes (Ciocârlan 1988, 1990)		
			Lemnaceae			
***Lemna trisulca* L.**	Popescu 1963	HD Per.		Stagnant waters (Ciocârlan 1988, 1990)		
L. minor L.	Csuros 1947; Mititelu 1971c; Dobrescu 1973; Samú 1982; Ştefan 2001b	HD Per.		Stagnant waters (Ciocârlan 1988, 1990)		

FIGURES

Fig. 1. *Myosurus minimus*

Fig. 2. *Ranunculus pedatus*

Fig. 3. *Ranunculus lateriflorus*

Fig. 4. *Ranunculus sardous*

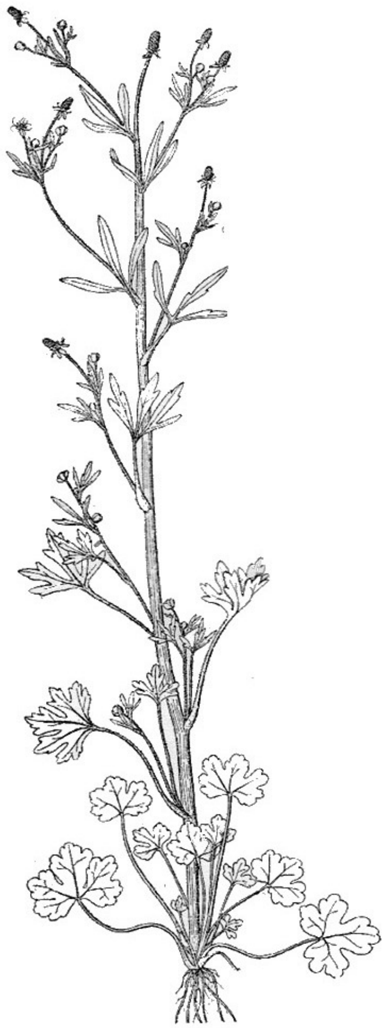

Fig. 5. *Ranunculus sceleratus*

Fig. 6. *Cerastium dubium*

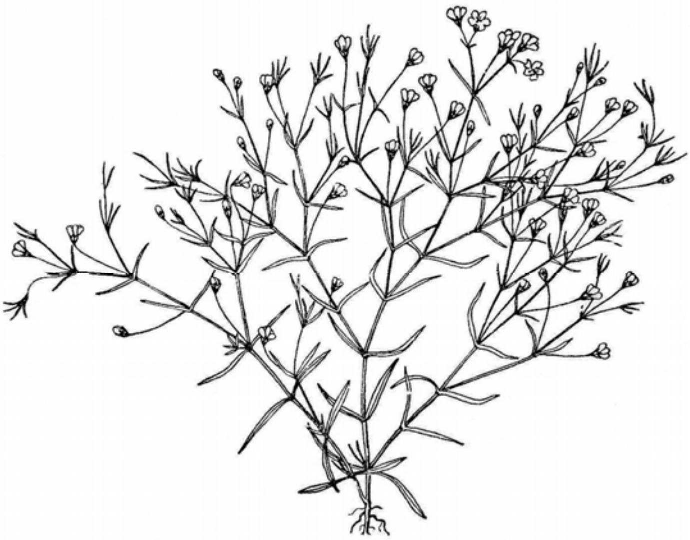

Fig. 7. *Gypsophila muralis*

Fig. 8. *Dianthus guttatus*

Fig. 9. *Dianthus pratensis* ssp. *racovitzae*

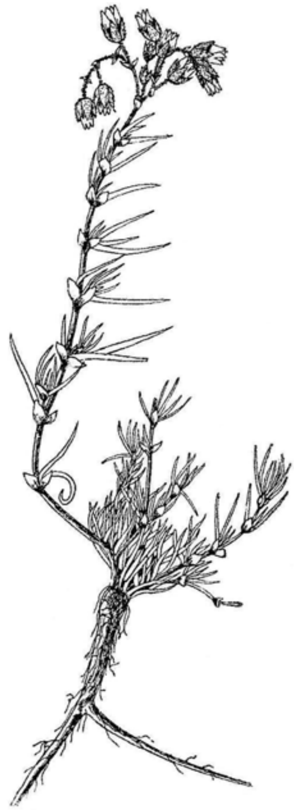

Fig. 10. *Spergularia media*

Fig. 11. *Spergularia rubra*

Fig. 12. *Spergularia marina*

Fig. 13. *Polycnemum arvense*

Fig. 14. *Chenopodium glaucum*

Fig. 15. *Atriplex littoralis*

Fig. 16. *Atriplex prostrata*

Fig.17. *Atriplex tatarica*

Fig. 18. *Halimione pedunculata*

Fig. 19. *H. verrucifera*

Fig. 20. *K. ceratoides*

Fig. 21. *Camphorosma annua*

Fig. 22. *Camphorosma monspeliaca*

Fig. 23. *Bassia prostrata*

Fig. 24. *Bassia hirsuta*

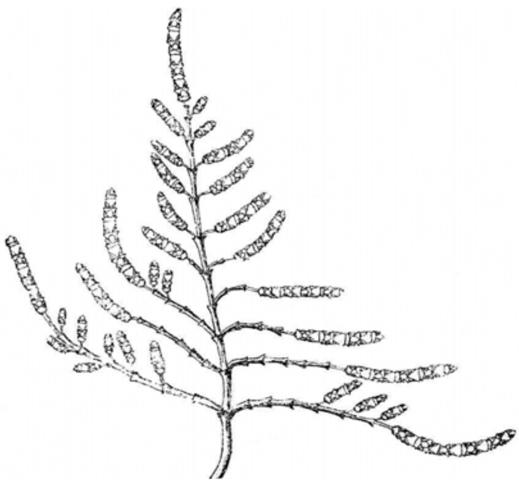

Fig. 25. *Bassia sedoides*

Fig. 28. *Salicornia europaea*

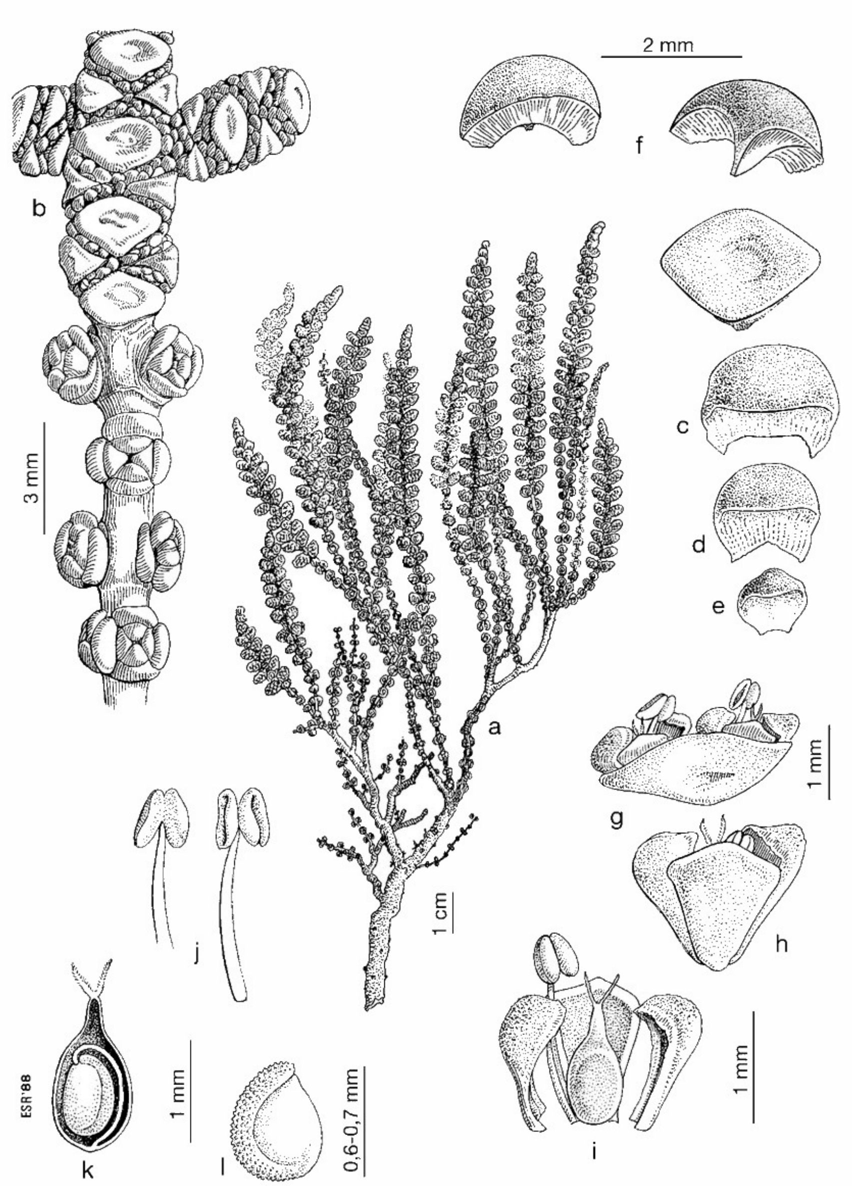

Fig. 26. *Halocnemum strobilaceum*
(a: general aspect; b: florifer branch; c-e: different leaves of a small branch; f: bracts; g: bracts with flowers; h: flower – adaxial view; i: flower, with separated pieces of perianth; j: stamen; k: section through the ovary; l: seed)

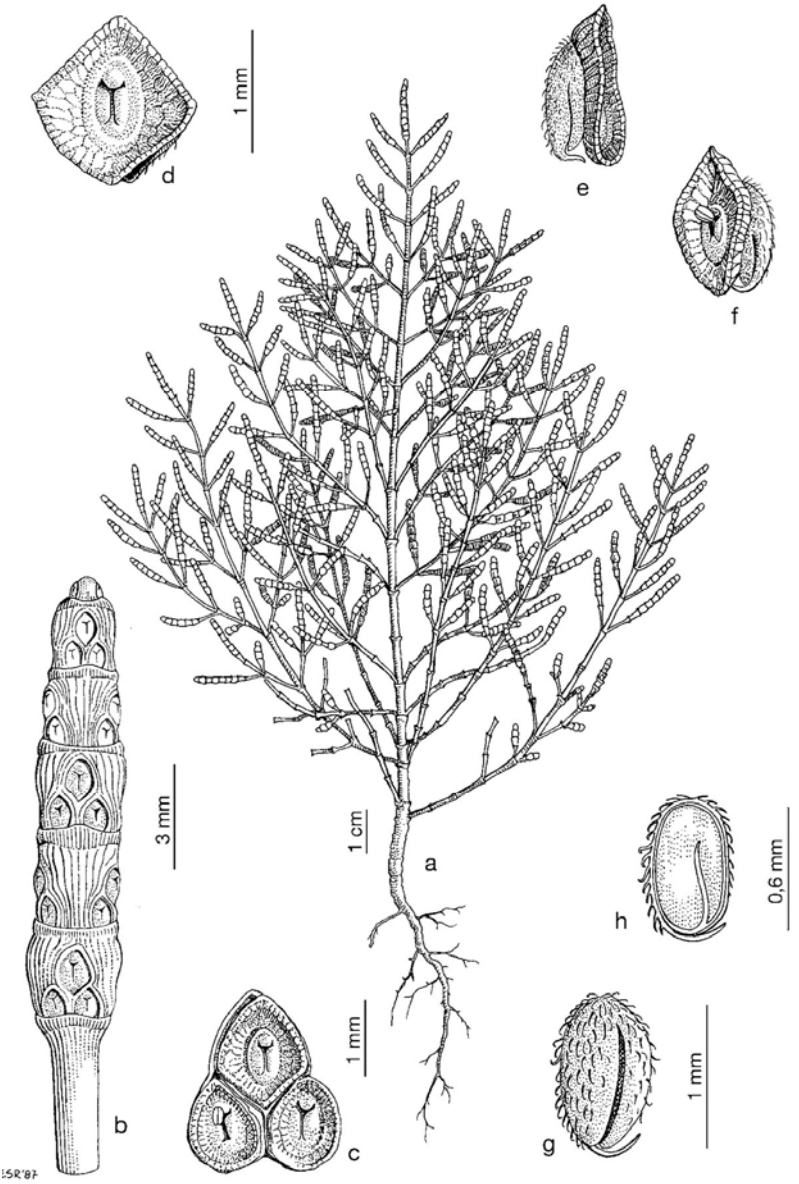

Fig. 27. *Salicornia ramosissima*
(a: general aspect; b: inflorescence; c: cyme; d: flower; e: seed with still attached remainings of perianth; f: fruit perianth; g: seed; h: longitudinal section through the seed)

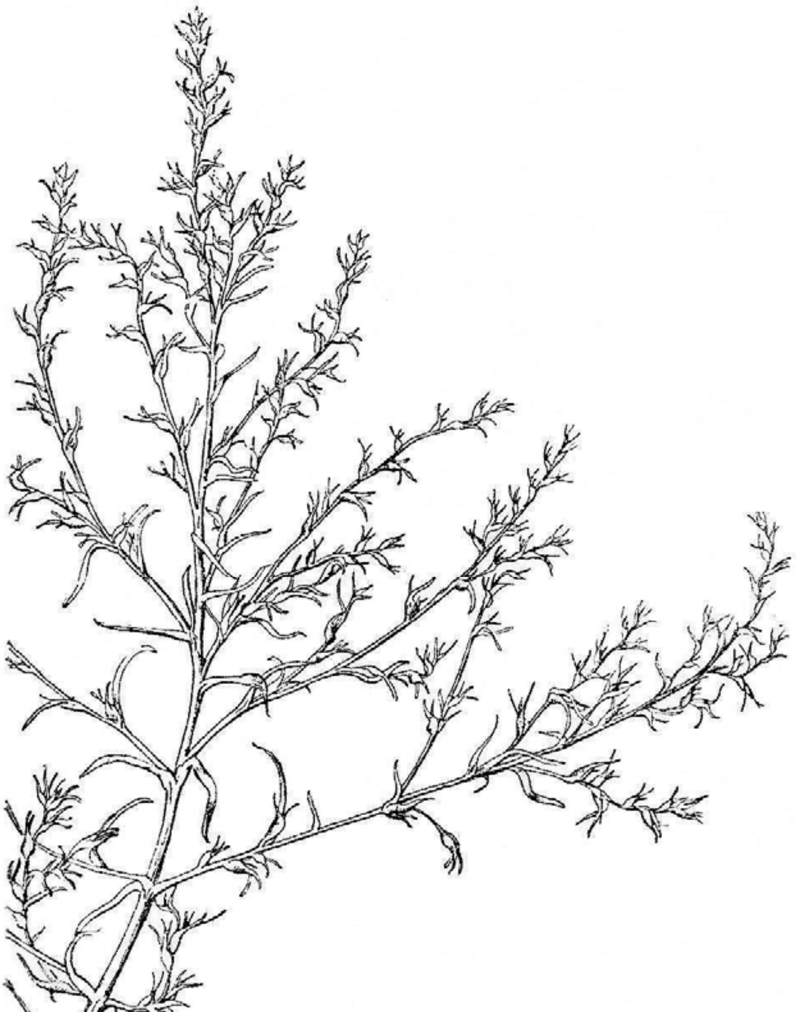

Fig. 29. *Petrosimonia triandra*

Fig. 30. *Suaeda maritima*

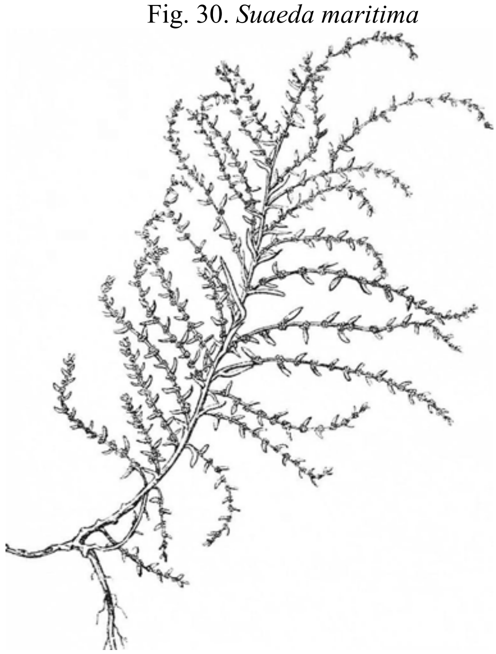

Fig. 31. *Suaeda pannonica*

Fig. 32. *Salsola soda*

Fig. 33. *Polygonum aviculare*

Fig. 34. *Polygonum maritimum*

Fig. 35. *Polygonum patulum*

Fig. 36. *Rumex stenophyllus*

Fig. 37. *Rumex maritimus*

Fig.. 38. *Limonium bellidifolium*

Fig. 39. *Limonium gmelinii*

Fig. 40. *Limonium vulgare*

Fig. 41. *Limonium latifolium*

Fig. 42. *Goniolimon tataricum*

Fig. 43. *Goniolimon besseranium*

Fig. 44. *Trigonella procumbens*

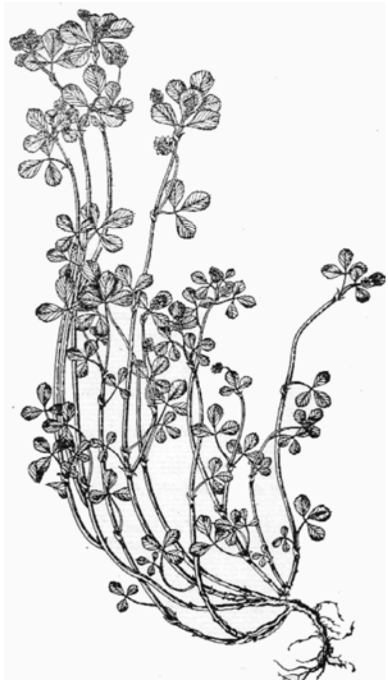

Fig. 45. *Medicago lupulina*

Fig. 46. *Melilotus dentata*

Fig. 47. *Trifolium micranthum*

Fig. 48. *Trifolium fragiferum*

Fig. 49. *Trifolium striatum*

Fig. 50. *Trifolium ornithopodioides*

Fig. 51. *Trifolium strictum*

Fig. 52. *Trifolium retusum*

Fig. 53. *Trifolium angulatum*

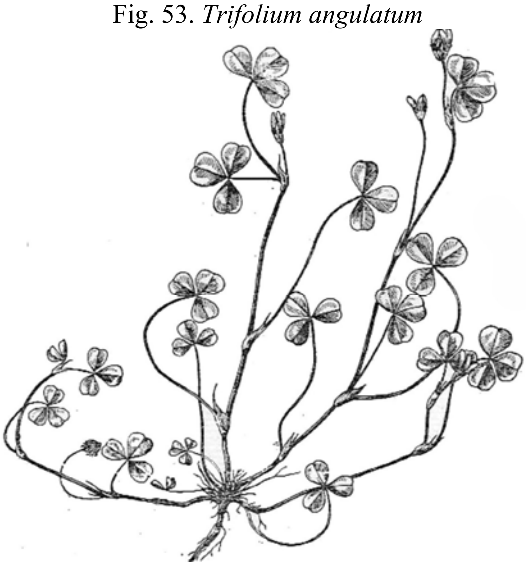

Fig. 54. *Trifolium subterraneum*

Fig. 55. *Lotus angustissimus*

Fig. 56. *Lotus tenuis*

Fig. 57. *Lotus corniculatus*

Fig. 58. *Tetragonolobus maritimus*

Fig. 59. *Lythrum salicaria*

Fig. 60. *Lythrum virgatum*

Fig. 61. *Hippophaë rhamnoides*

Fig. 62. *Nitraria schoberi*

Fig. 63. *Bupleurum tenuissimum*

Fig. 64. *Oenanthe silaifolia*

Fig. 65. *Peucedanum latifolium*

Fig. 66. *Tamarix ramosissima*

Fig. 67. *Frankenia pulverulenta*

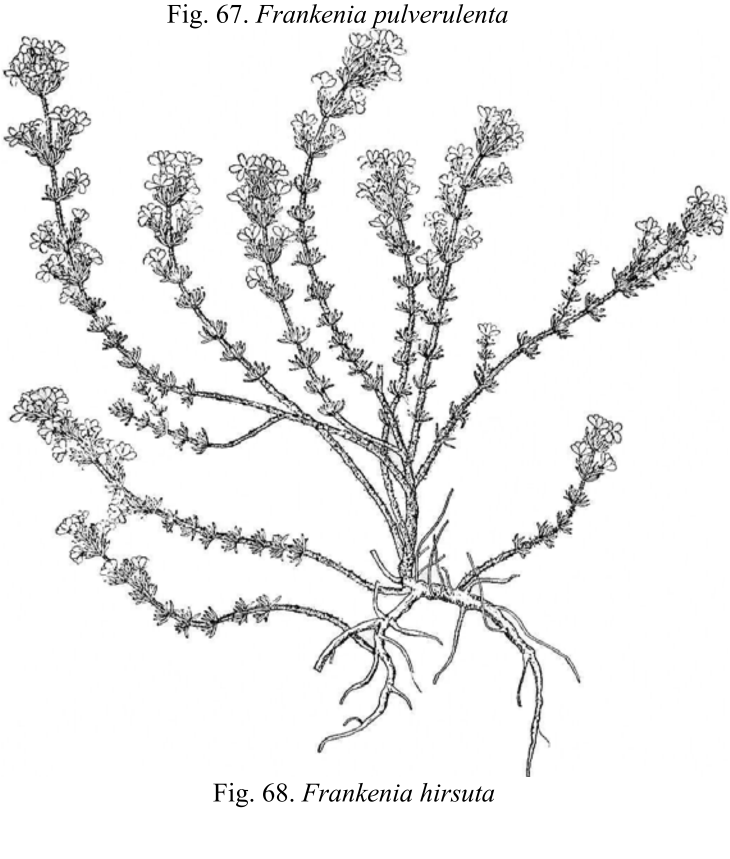

Fig. 68. *Frankenia hirsuta*

Fig. 69. *Erysimum repandum*

Fig. 70. *Lepidium crassifolium*

Fig. 71. *Lepidium perfoliatum*

Fig. 72. *Lepidium latifolium*

Fig. 73. *Lepidium ruderale*

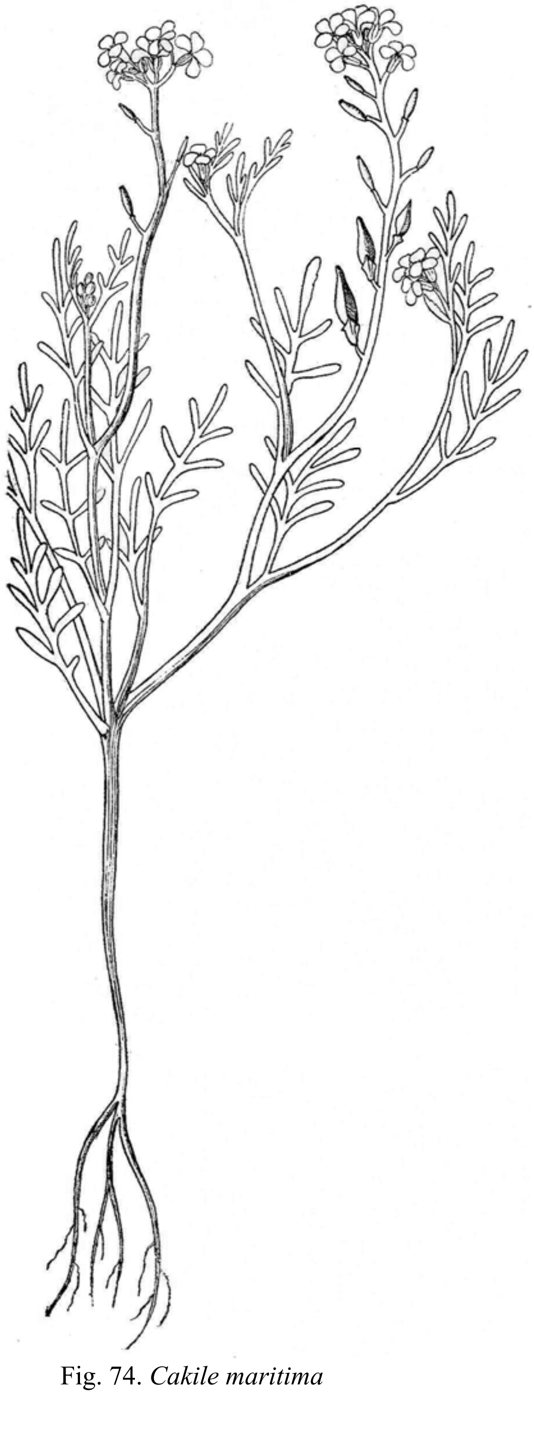

Fig. 74. *Cakile maritima*

Fig. 75. *Crambe maritima*

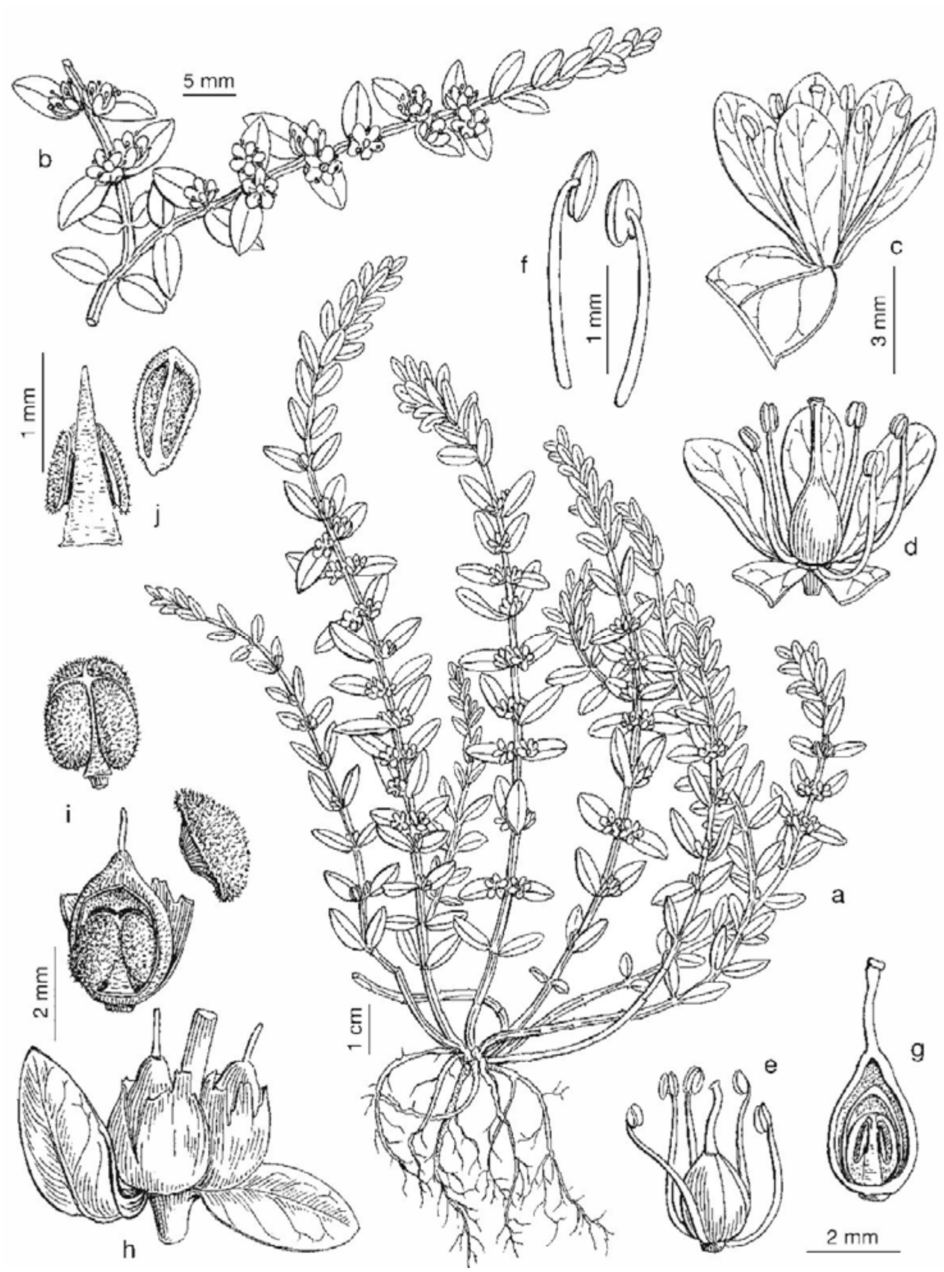

Fig. 76. *Glaux maritima*
(a: general aspect ; b: sepparated branch ; c: flower with a leaf fragment; d: flower without sepals; e: androecium and gynoecium; f: stamen; g: longitudinal section through ovary; h: fruits; i: detached fruits; j: seeds)

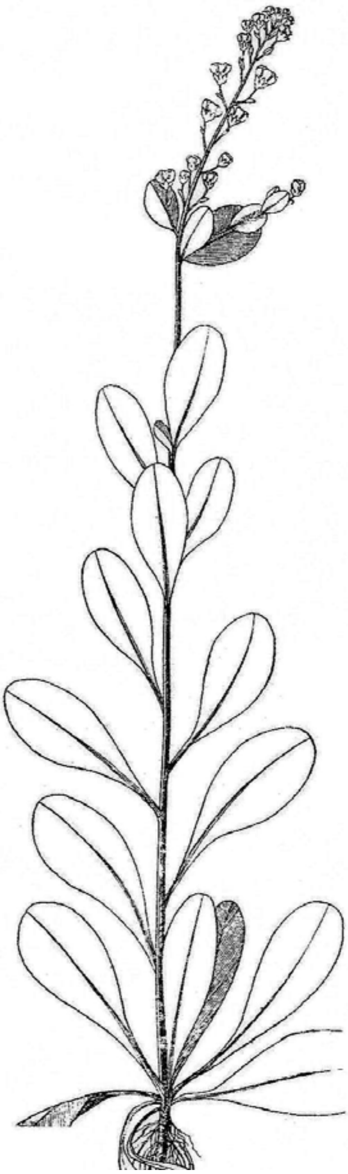

Fig. 77. *Samolus valerandi*

Fig. 78. *Centaurium pulchellum*

Fig. 79. *Plantago coronopus*

Fig. 80. *Plantago maritima*

Fig. 81. *Plantago tenuiflora*

Fig. 82. *Plantago schwarzenbergiana*

Fig. 83. *Plantago cornuti*

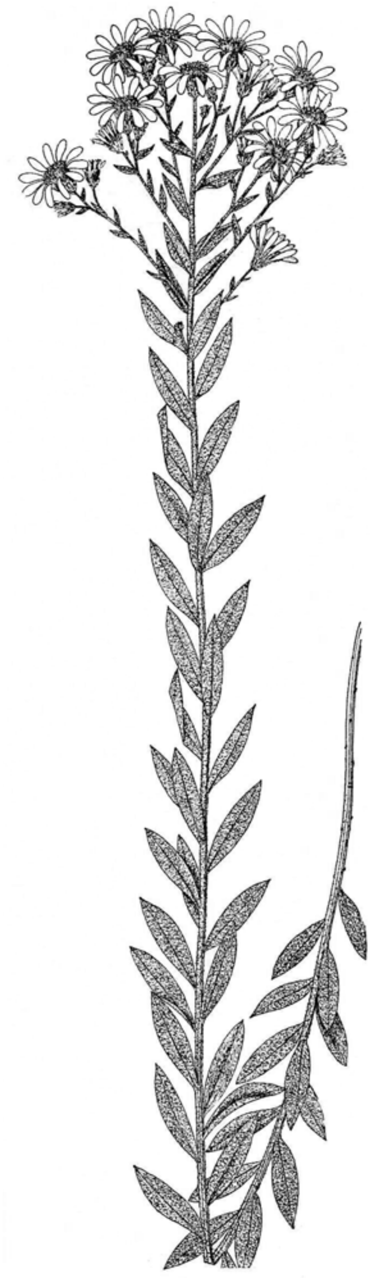

Fig. 84. *Aster oleifolius*

Fig. 85. *Aster linosyris*

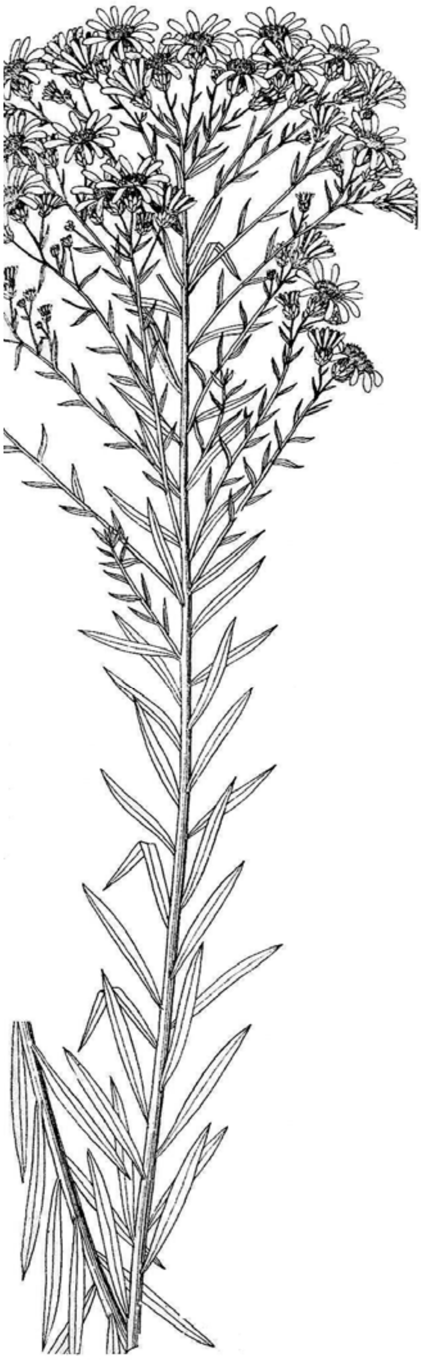

Fig. 86. *Aster sedifolius*

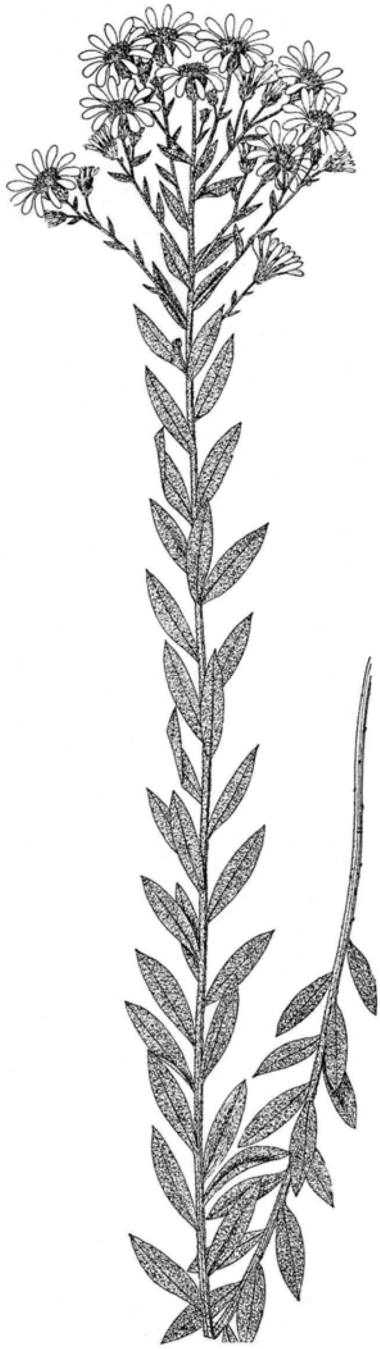

Fig. 87. *Aster canus*

Fig. 88.
Aster tripolium

Fig. 89.
Inula britannica

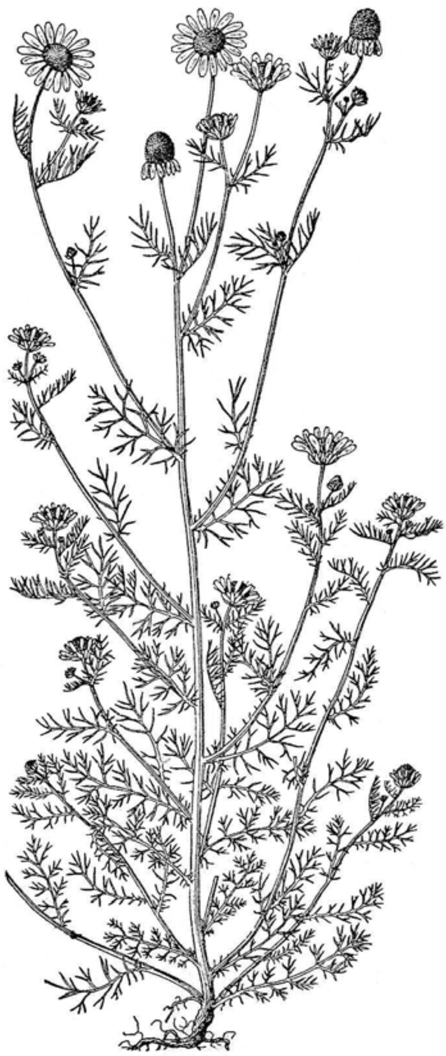

Fig. 90.
Matricaria recutita

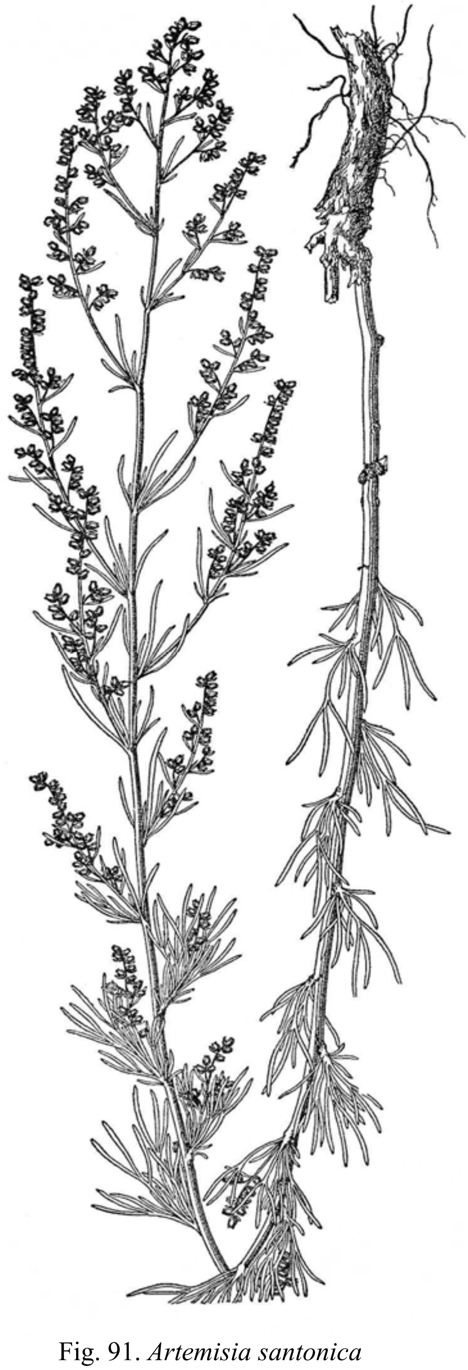

Fig. 91. *Artemisia santonica*

Fig. 92.
Stemmacantha serratuloides

Fig. 93.
Scorzonera cana

Fig. 94.
Scorzonera laciniata

Fig. 95.
Scorzonera parviflora

Fig. 96. *Taraxacum bessarabicum*

Fig. 97. *Lactuca saligna*

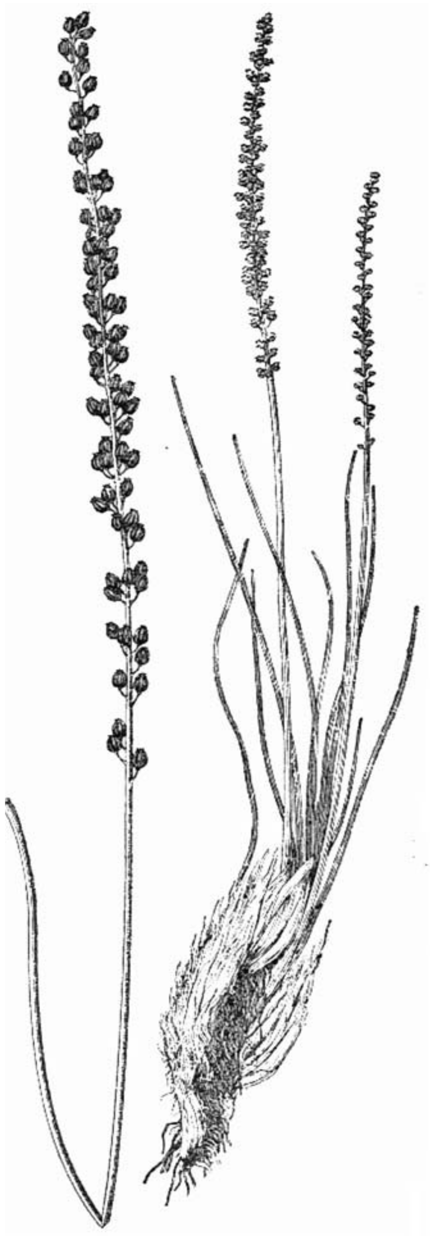

Fig. 98. *Triglochin maritima*

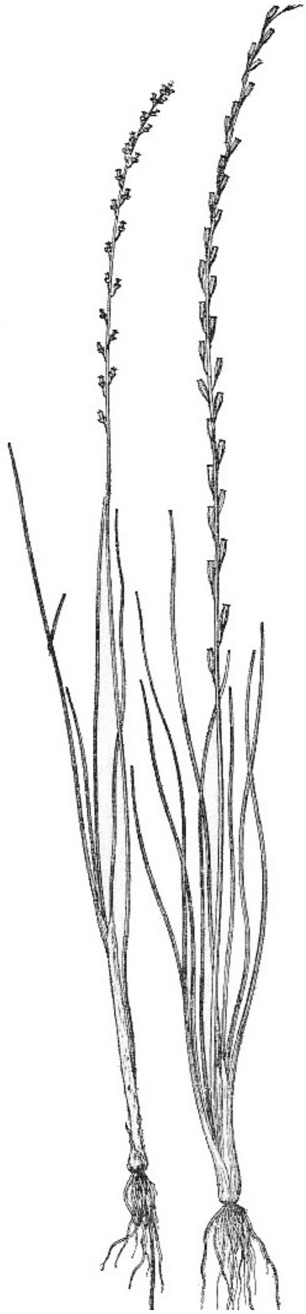

Fig. 99. *Triglochin palustre*

Fig. 100. *Ruppia maritima*

Fig. 101. *Najas marina*

Fig. 102. *Najas minor*

Fig. 103. *Zannichellia palustris*

Fig. 104. *Zostera marina*

Fig. 105. *Zostera noltii*

Fig. 106.
Allium vineale

Fig. 107. *Iris halophila*

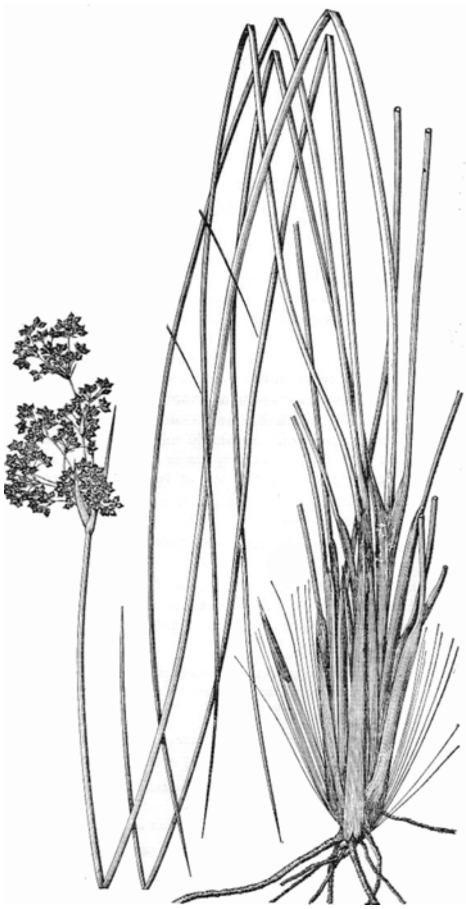

Fig. 108. *Juncus acutus*

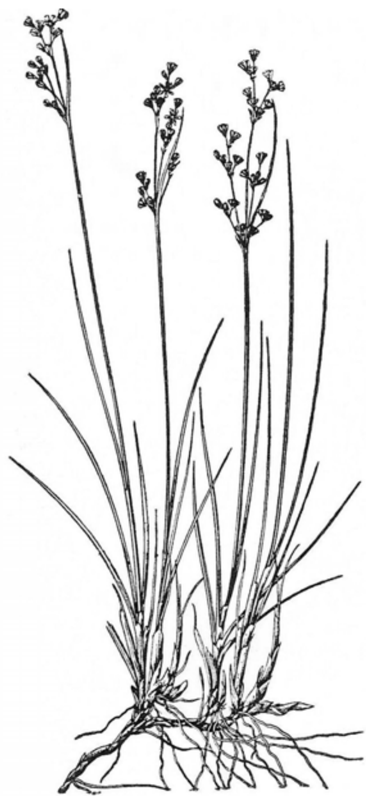

Fig. 109. *Juncus compressus*

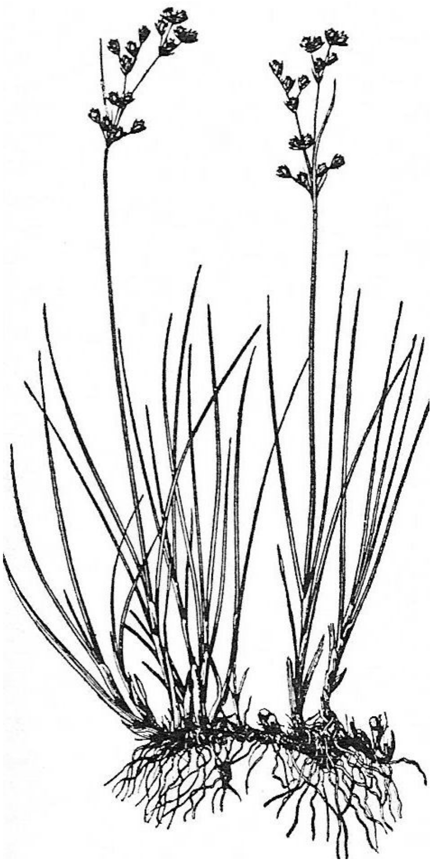

Fig. 110. *Juncus gerardi*

Fig. 111. *Juncus maritimus*

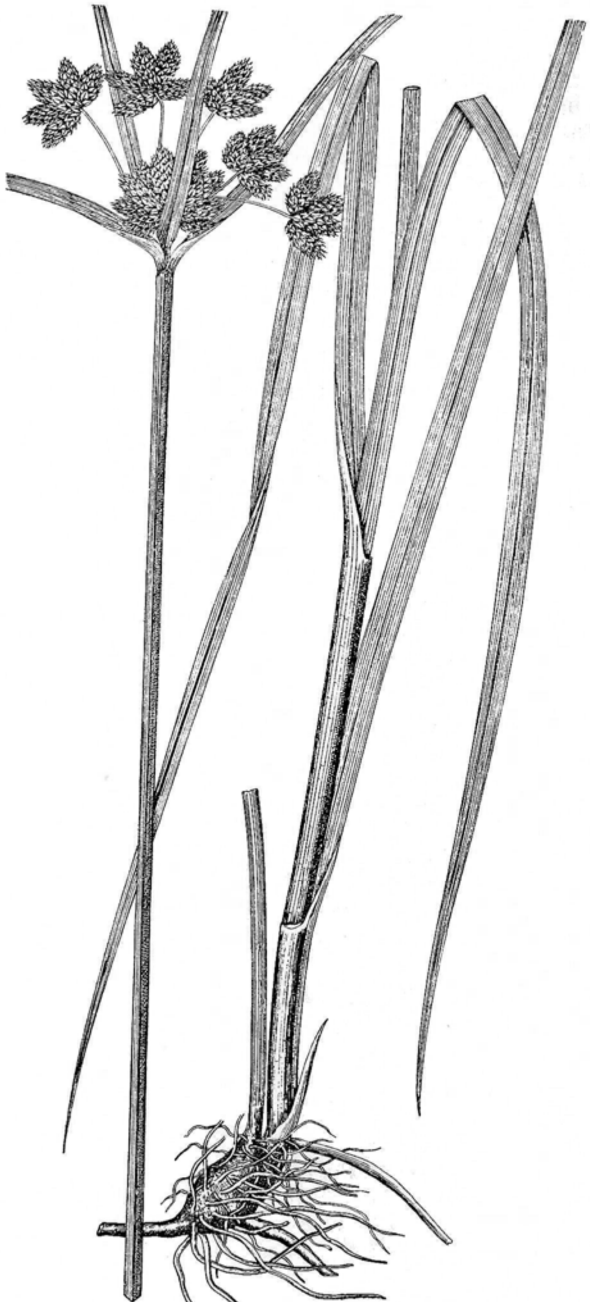

Fig. 112. *Bolboschoenus maritimus*

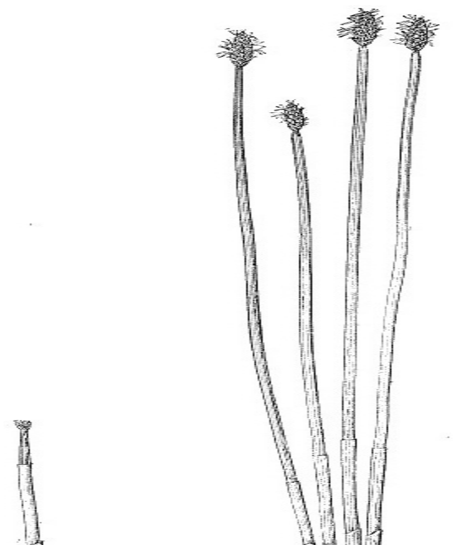

Fig. 113. *Eleocharis uniglumis*

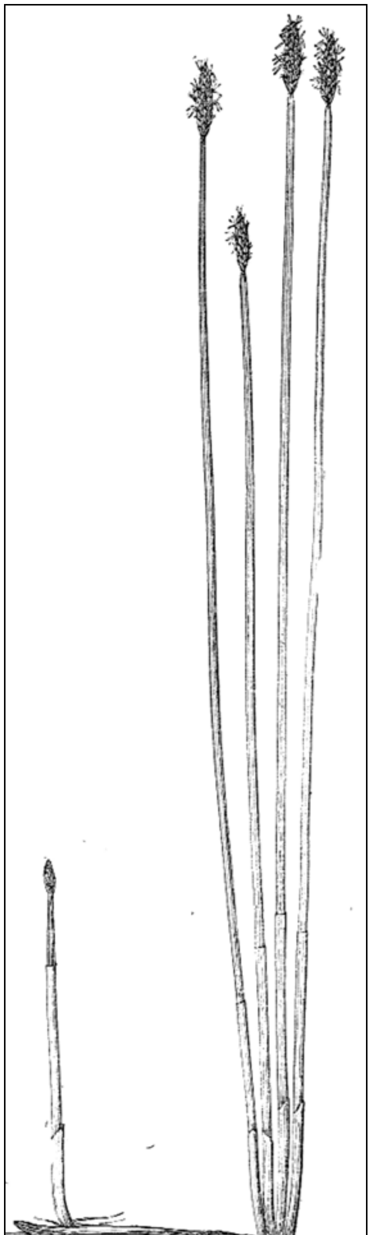

Fig. 114. *Eleocharis palustris*

Fig. 115. *Cyperus pannonicus*

Fig. 116. *Carex distans*

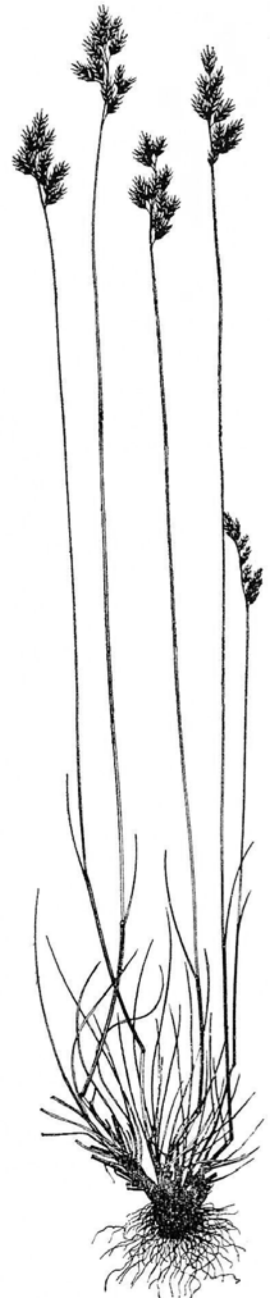

Fig. 117. *Festuca pseudovina*

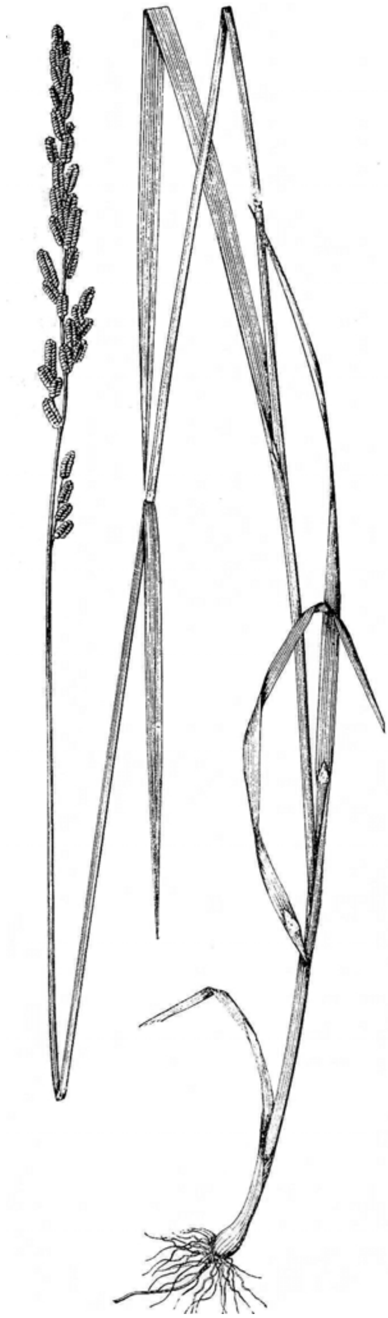

Fig. 118. *Beckmannia eruciformis*

Fig. 119.
Elymus elongatus

Fig. 120. *Agrostis stolonifera*

Fig. 121. *Pholiurus pannonicus*

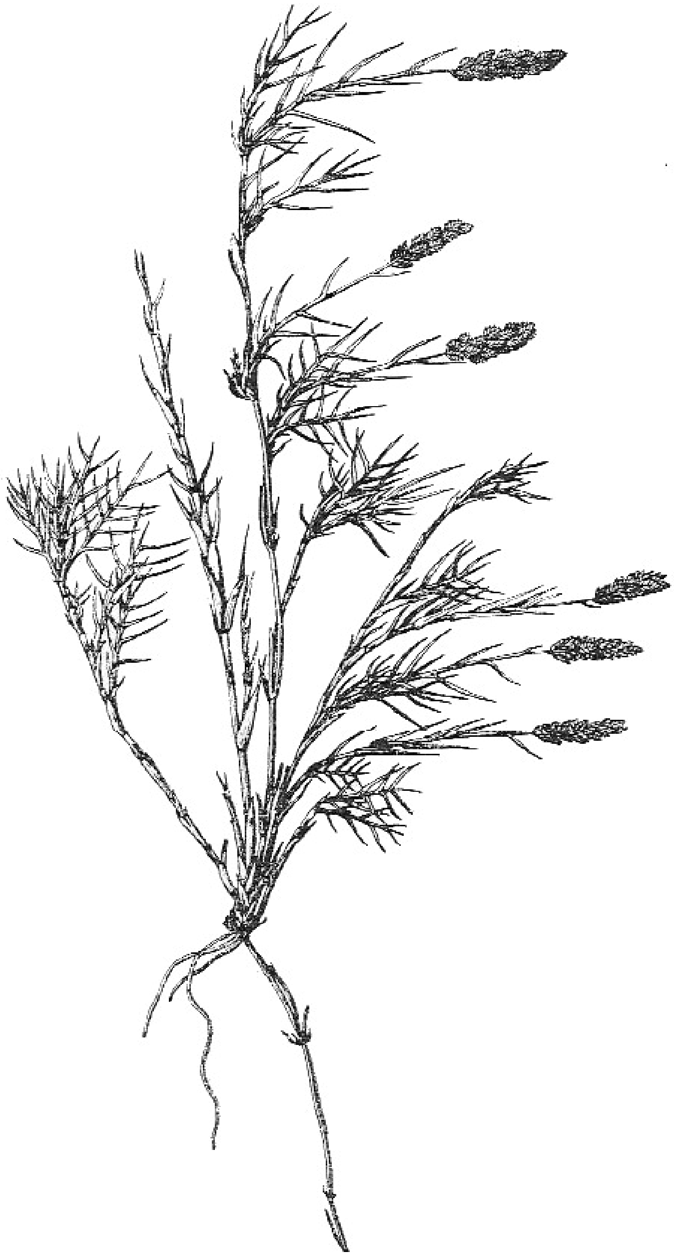

Fig. 122. *Aeluropus littoralis*

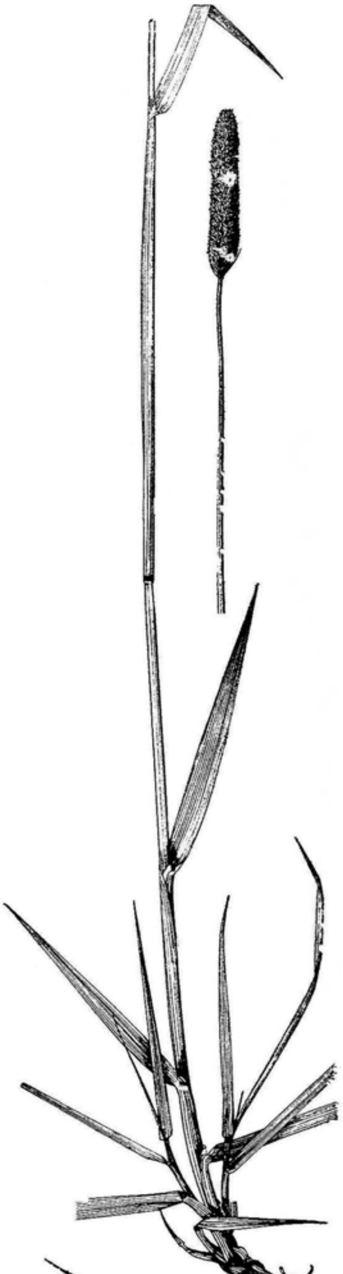

Fig. 123. *Alopecurus arundinaceus*

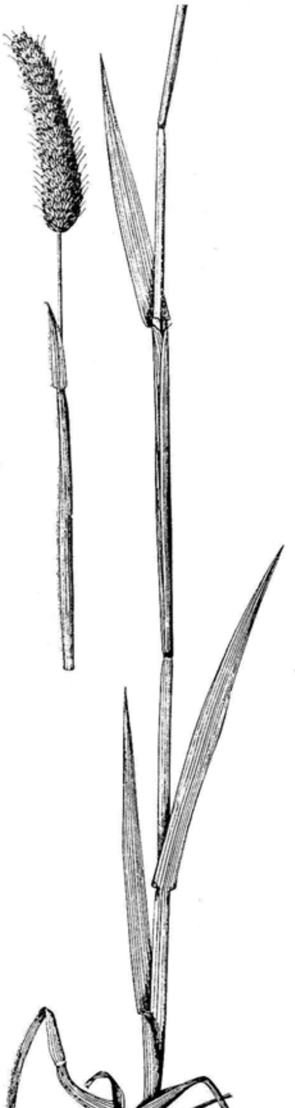

Fig. 124. *Alopecurus pratensis*

Fig. 125. *Crypsis aculeata*

Fig. 126. *Crypsis alopecuroides*

Fig. 127. *Crypsis schoenoides*

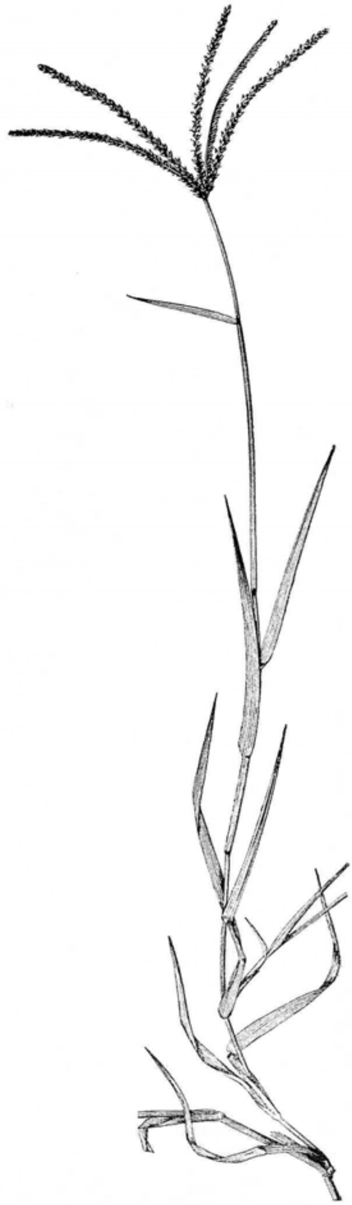

Fig. 128. *Cynodon dactylon*

CONCLUDING REMARKS

Following a brief analyze of this list we have recorded approximately 762 salt tolerant species related with saline environments; both *salt tolerant plants*, as well *saline environments* expressions must be regarded in the context of discussions carried out in the introductory part of this work. Of course that, at least at a first sight, this number seems very large and even unrealistic. As a matter of fact, perhaps many of species included here must be critically considered; many of them are subjected to the possibility of being reviewed or eliminated from this list. Going deeper, referring only to euhalophytes (*stricto sensu*), the number of species we included here would be *significantly lower*.

The species listed in this work are included in 68 families; the distribution and number of genera and species among different families can be shown in Table 7*. Species are just summarized as they were listed in the main part of this work.

Family	Genera	Species
Equisetaceae	1	1
Salviniaceae	1	1
Urticaceae	1	1
Ceratophyllaceae	1	1
Ranunculaceae	8	22
Papaveraceae	1	1
Caryophyllaceae	**15**	**32**
Amaranthaceae	1	3
Chenopodiaceae	**15**	**52**
Polygonaceae	2	19
Plumbaginaceae	3	9
Crassulaceae	1	2
Rosaceae	3	10
Fabaceae	**15**	**60**
Haloragaceae	1	1
Lythraceae	2	5
Onagraceae	1	2
Santalaceae	1	1
Eleagnaceae	1	1
Euphorbiaceae	1	14

* Nomenclature subjected to possible further modifications; For instance, we maintained *Amaranthaceae* apart from *Chenopodiaceae.*

Zygophyllaceae	4	4
Geraniaceae	2	5
Apiaceae	19	32
Hypericaceae	1	1
Elatinaceae	1	1
Malvaceae	3	4
Violaceae	1	1
Tamaricaceae	1	3
Frankeniaceae	1	2
Brassicaceae	24	36
Resedaceae	1	1
Salicaceae	2	5
Primulaceae	4	5
Gentianaceae	2	5
Apocynaceae	1	1
Asclepiadaceae	1	1
Solanaceae	2	3
Convolvulaceae	2	2
Boraginaceae	14	23
Verbenaceae	1	2
Lamiaceae	15	29
Callitrichaceae	1	1
Plantaginaceae	1	10
Scrophulariaceae	10	30
Campanulaceae	1	2
Orobanchaceae	1	1
Rubiaceae	2	11
Valerianaceae	1	1
Dipsacaceae	4	4
Asteraceae	**42**	**105**
Alismataceae	2	4
Butomaceae	1	1
Hydrocharitaceae	3	3
Juncaginaceae	1	2
Potamogetonaceae	1	4
Ruppiaceae	1	2
Najadaceae	1	2
Zannichelliaceae	1	2
Zosteraceae	1	2
Liliaceae	7	16
Iridaceae	1	9
Orchidaceae	1	2
Juncaceae	2	14
Cyperaceae	**7**	**29**

Poaceae	**40**	**94**
Sparganiaceae	1	1
Typhaceae	1	4
Lemnaceae	1	2

As we emphasized in the *Introduction*, some of these taxa might have an uncertain “status” in their relation with salinity.

This is the case of:

a. species with few citations within botanical literature. This paper is strongly based on many inputs, a large part of them extracted from “classic” Romanian botanical papers. When a given species is being mentioned by few authors, we can assume that its “halophytic” character is “weakened”. Contrarily, when a species has been regularily cited by many botanists during the time, the “accidental” halophytic affinity decreases. In few situations, some taxa have been found only in one single paper, and the fact that further botanists do not included them in their works is also challenging.
b. species mentioned from habitats whose relation with salinity is obscure. In this situation, the lack of data related to these habitats is very important, since a degree of arbitrariness certainly arises.
c. several species mentioned from halophytic associations, as “accompanying” species, next to some well recognized halophytes. In this case, it is almost impossible to exactly delineate the precise relation of these species with salinity factor.

Therefore, we can discuss about a “constant and repetitive” strong criteria when discussing and including species in this list. This is explained by the fact that the same species has been regularly mentioned as salt tolerant plant by a great number of authors. Of course that further complementary study will elucidate many aspects regarding salt tolerance, classification, ecology and economic utilization species here included.

Similar lists were also made by other foreign authors, mostly for restricted regions; in some cases, the faced difficulties are clearly recognized and a part of them are similar with those we had to deal.

Anyway, comparisons between lists with salt tolerant plants from different countries/regions must be done with special caution. Apart from the specific of halophytic flora and saline environments of each country, is still difficult to find convergent points. In several lists we consulted, authors do not specify the chosen criteria for including species in their lists. When

mentioned, the same problems we discussed in *Introduction* could be taken into consideration.

In addition, the Anglo-Saxon language related especially to saline environments is a little bit complicated, compared to the Romanian one. This is because it comprises various terms, corresponding to plenty ecosystems: saltmarshes, coastal ecosystems (subjected to periodic tides), mangroves, estuaries, and so forth; these terms are also versatile and they are not familiar to Romanian ecological language.

As we already underlined, the Romanian language – yet apparently scarce - is sometimes confusing or not very explicit, since many terms such as: salines, salty soils (sometimes salinized soils), salt lakes, salt places, and salty steppes are being used. These terms are very often accompanied by many adjectives, such as: few, little, highly, moderately – salinized.

Moreover, differences also occur between Anglo-Saxon and Romanian vision about saline environments and halophytes, consequently. For instances, many studies were conducted by botanists from abroad in sea coastal ecosystems (sea shores) or related environments (sea flooded areas, estuaries, mangroves). So, during the time, the term "saltmarshes" was restricted almost exclusively to these coastal ecosystems, closed to the sea salinity influence. For instance, Adam (1990) in this monograph refers to saltmarsh as a "coastal saltmarsh", despite the fact that in his text book the throughout used term is saltmarsh. In this regard, sometimes, when we found in a foreign text the term "saltmarsh", is not very clear if there is a coastal or inland salinized ecosystem; using the word "saltmarsh" for an inland (and sometimes dry) salty area might be ecologically incorrect.

Romania had a different "tradition" in this regard: the Black Sea has no tidal activity and the study of halophytes flora was focused mainly on inland saline habitats (non-coastal). Of course that here are salty regions next to the sea shore (marine saltmarshes), but saltmarshes can also occur in the inland areas.

Aronson in his data base with salt tolerant plants of the world (1987, referred version) included about 1565 species (548 genera and 120 families). Aronson himself recognized the difficulties of choosing the appropriate criteria for including species in his list. Anyway, the more "economic" motivation of choosing criteria seems to be of great interest: "I took a pragmatic approach based on current realities limiting agriculture in arid and semi-arid as well as coastal areas in temperate and especially tropical regions". In the following paragraphs, Aronson considered two situations:

1. "At what level of salinity do farmers or foresters gives up growing conventional crops – even the most salt-tolerant?
2. What kinds of water are available for expanding agriculture and forestry on currently exploited land, or preferably, on land degraded by the activity of man, in the event that appropriate halophytes can be identified and developed to make use of those water sources?" (Aronson, 1987).

Anyway, while the answer to the first question is – according to Aronson - "usually" (electrical conductivity of 7-8 dS/m^{-1}, "if not considerably lower"), the answer to the second is "more complex".

However, the way in which Aronson deals with some aspects is intriguing and even confusing, since few lines below, from "more complex" (answer), "with regards seawater (electrical conductivity of 50-80 dS/m^{-1}), our problem of definition is simple: any plant which grows naturally or which can be successfully cultivated with seawater irrigation should be recognized as a halophyte and will be included in HALOPH. However, we certainly do not *limit* our inclusion in HALOPH to those species amenable to seawater irrigation". Otherwise, the relativity related to debated issue could be clearly recognized in Aronson's database. Thus, "HALOPH is ultimately intended to provide useful information on all the known and *suspected* (our nuance) salt-tolerant higher plants in the world". In other place, he says that "survival under saline conditions may be an adequate definition of halophytes, but it is *not* sufficient criterion for inclusion in HALOPH". Finally, the primary criterion of inclusion is "known or *presumed* tolerance to electrical conductivity measuring (or estimated to be at least) 7-8 dS/m^{-1}, during significant portions or all of the plant's life".

Well, in order to complete this semantic analysis, we add the observation that in the subtitle of Aronson's work, there is a substitution of the term "salt tolerant plants" with that of "halophytes" (*Salt tolerant plants of the world. A computerized data base of* ***halophytes*** *with emphasis on economic uses past, present and future)*.

As we anticipated in the *Introduction* of this book, perhaps is not so adequate to easily pass from "salt tolerant plants" to "halophytes". For this reason, this paper aims to be a list of Romanian *salt tolerant* plants and not a list of Romanian *halophytes*.

Other authors also suggest the specific problems occurring when trying to compile such lists with salt tolerant plants.

For instance, Duncan (1974) in his list of vascular halophytes of the Atlantic and Gulf coasts of North America North of Mexico says that he

"prepared a list of species *known* to be or *suspected* of being halophytic, i.e., those that can tolerate seawater, pure or diluted" (p. 24). He gives a 347 halophyte species, included in 177 genera and 75 families. Families with the largest number of representatives are: *Poaceae* (50 species in 28 genera), *Asteraceae* (43 sp. in 18 g.), *Cyperaceae* (36 sp. in 8 g.), *Chenopodiaceae* (18 sp. in 6 g.) and *Polygonaceae* (15 sp. in 3 g.). We have listed here only the important families quoted by Duncan. This author emphasizes also the little uniformity in the literature in the usage of terms to identify the types of halophytic environments.

Kefu *et al*. (1995) based on preliminary field investigation and a survey of literature propose for China approximately 500 species of halophytes angiosperms, representing 226 genera and 58 families. Authors have followed the halophytes ecological definition of Jennings (1976), who stated that halophytes are the native flora of saline soils. This definition was adapted by Greenway and Munns (1980), who assumed that soils in this case contain solution with at least 0.33 MPa, being equivalent to 70 mM monovalent salts. The well represented families are: *Chenopodiaceae* (107 species in 26 genera), *Asteraceae (*69 sp. in 28 g.), *Poaceae* (49 sp., in 32 g), *Fabaceae* (28 sp. in 19 g.).

Öztürk *et al*. (1995) recorded for Van Lake Basin-Turkey (East Anatolian part of Turkey) a number of approximately 186 halophyte species, distributed in: *Poaceae* (25 species), *Asteraceae* (15 species), *Chenopodiaceae* (13 species), *Cyperaceae* (11), *Fabaceae* (11), *Brassicaceae* (7). The authors have compared their list with those of Güvensen (1994) for coastal halophytic flora of the Aegean region in Turkey (West Anatolia), recording a number of 180 species and with those of Akhani and Horbanli (for Iran), who listed 345 halophyte species.

Of course that our intention is not to numerically compare these data with Romanian ones. Perhaps the only reliable correspondence we can find and discuss is related to the distribution of salt tolerant plants within different botanical families. At a glance, we can notice that some families seem to display a "preference" for halophytic genera and it would be more interesting to get further insight in the future.

Poaceae, Asteraceae, Fabaceae, Brassicaceae, and *Cyperaceae* – very rich families in salt tolerant plants – are perhaps too large and heterogeneous to find a close relationship between comprising species and salinity factor. It is really challenging to circumscribe an adaptive pattern within these families; taxa here included display diffuse anatomical adaptations, and when present, they could be discussed in relation to salinity

only in few situations. This is the case of salt glands, anatomical features found only in *Poaceae*, from the families listed above. Many salt tolerant plants belonging to these families are perennial and we think that this is a very important ecological feature that could assure the persistence of a species in a certain ecosystem, even (at least hypothetically) in the absence of producing seeds.

Chenopodiaceae (sometimes included by some taxonomists in *Amaranthaceae*) is, no doubt, the most halophytic botanical family. Many of chenopods are strictly halophytic and they grow only in strongly salinized ecosystems; they provide the most striking example of adaptation in high salinity conditions. Their features are in relation to environmental factors: succulence, salt hairs, apparently leafless habit (the case of articulated succulent chenopods), C_4 photosynthesis. Perhaps this is an example of ecological co-evolution, but further research will contribute to a better delineation of a possible "halophytic" pattern within *Chenopodiaceae*.

Several families are also especially halophytic, as is the case of *Plumbaginaceae*, with many *Limonium* species – especially recognized due to the presence of salt glands; *Primulaceae* and *Tamaricaceae* comprise few halophytic genera and species, but they are strongly "certified" as halophytes grace to the typical salt glands.

Our vision about halophytes is to discuss them taking into consideration their ecology and this suggests, of course, the involvment of environmental factors in plants life. For this reason, in this work, we tried to focus mainly on the ecology of several species, when data were available from different authors or from our personal observations. This is in the direction of the old Romanian "tradition" in approaching halophytes, a research direction that must be rediscovered and promoted to the foreign scientific media. We are also aware that the scarcity of data related to other aspects from halophytes biology imposes some limitations to this work; experimental approaches, especially referring on salinity threshold, as well as the potential economic uses of several species are major points to be reached in the future. Apart from few species, mentioned on saline habitats that might have medicinal value (*Matricaria, Inula, Lepidium, Artemisia* species) others have a presumed medicinal potential. When some of these species are discussed elsewhere as medicinal herbs, they are not correlated with saline habitats. In this context, the pharmacological action of the *same* species growing on salty areas must be carefully checked in the future.

There are also several data regarding the potential use of some salt tolerant species for restoring salt-affected areas; these are addressing to

some ornamental trees and especially to herbaceous species that could be introduced in the agriculture for grazing. Unfortunately, the hiatus occurring after 1990 until today in the field of studies testing the behavior of such species in extended natural salinized conditions negatively affected the results that might have been obtained. Perhaps this is an additional reason explaining the lack of data for the issue we are discussing.

And why it is so important to know which plants are salt tolerant?

As we extended in the introductory part, before 1990, it *was* important, because the agriculture represented a major economic strategy of our country. Knowing which plants would have been cultivated on salinized areas, an optimal use of all degraded lands would have been done. Anyway, the situation in Romanian agriculture dramatically changed in the last two decades. Now is important to know on which salt tolerant species we can rely, if the global scenario will worsen and if one day these species need to be considered for farming. Of course that in Romania salinization is not as severe as is the case of countries from arid and semi-arid areas.

But salinization and aridization remain for many countries a very serious challenge. Our opinion is that, to a considerable extent, salinization is an irreversible phenomenon and the only solution is to use salt-tolerant plants in agriculture and perhaps brackish water for irrigation. And in this situation, perhaps the key will be found in the species neither *halophytes*, nor *glycophytes*, but rather in those *intermediary* species with some economic value and with a certain degree of salt resistance.

In this context, we think that such a list with salt tolerant plants would represent a starting point for opening new perspectives, even for times we can not exactly predict at this moment.

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GENUS AND SPECIES INDEX*

* Every species is follow by page number where it is mentioned in the text; when available, figure number is also given.

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The main objective of this book is to collate data referring on Romanian salt tolerant plants and to review the literature which has been published over more than last century in botanical field. The writing of this book has taken much longer than I intended and many of my ideas have evolved in keeping with the format and progress of the book. The history of this work dates back to 4 years ago when I started to publish and promote books in a series that I wanted to be included in a new botanical discipline, called Halophytology.

The topics covered in this book range from discussions about halophytes definitions and classifications to a large list with salt tolerant plants growing in Romania.

However, since the terms "halophytes" and "salt tolerant plants" are often interchangeable, I would invite readers of this book to also have in their mind the term "plants susceptible of being salt tolerant." This is because everything dealing with salinity is, in some extent, problematic and perhaps avoiding general and radical statements about halophytes would be the most acceptable strategy.

Author